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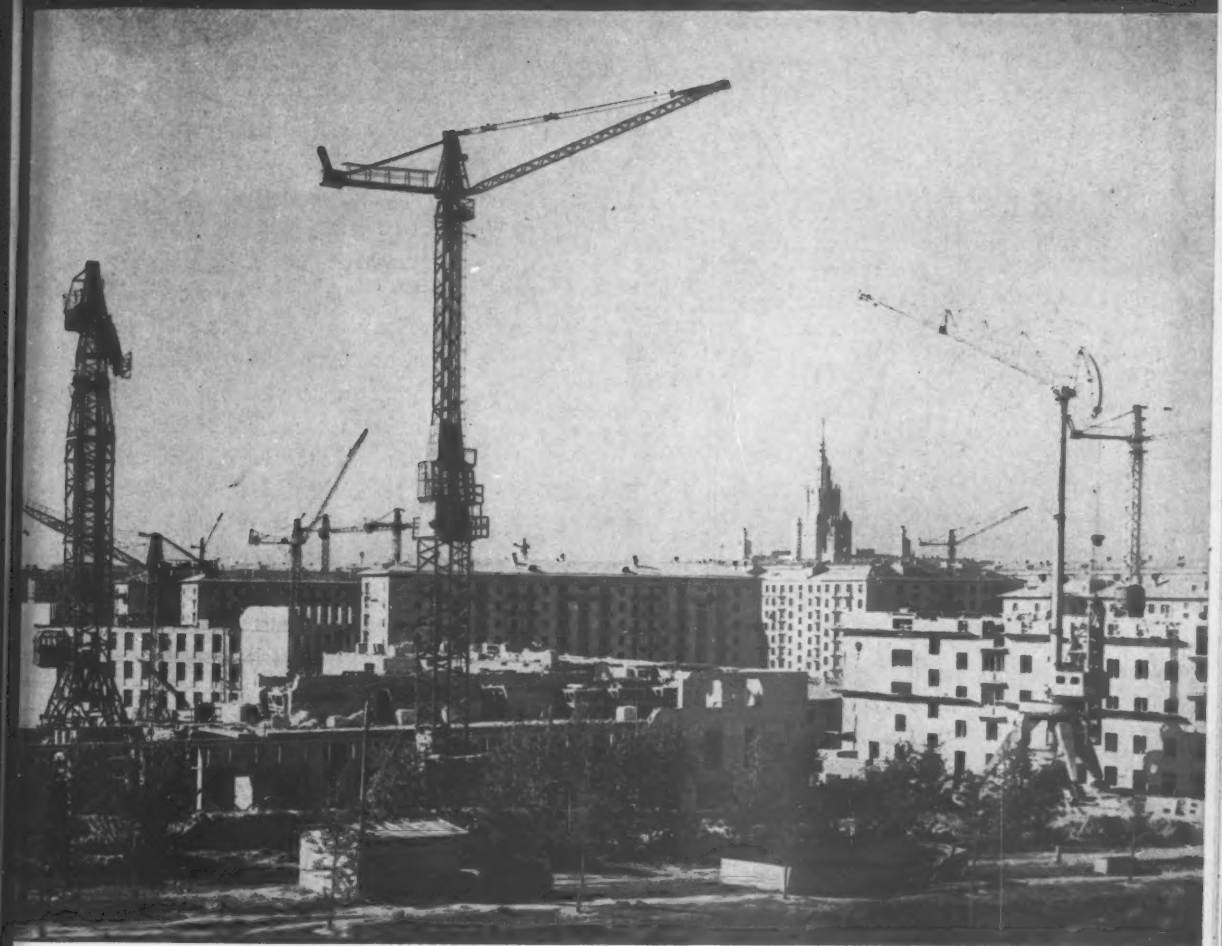

Russian construction: How good is it? p.32

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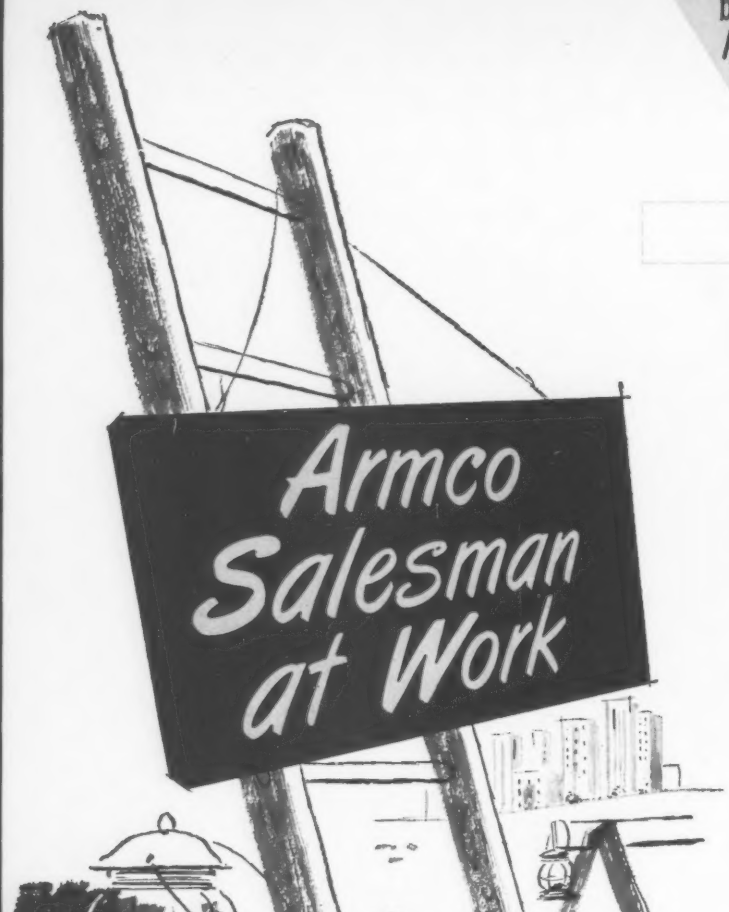
New steels are born at Armco



How Armco Benefits You

If *you* are responsible for drainage structures, a you *sure* they are in good condition? An Armco Engineer, called in to inspect failing drainage conduits, can possibly save many thousands of do

How? By suggesting methods and materials t correct faulty conditions in time. Once an underground structure fails, it's too late for low- corrective measures.

So if you are concerned about the condition drainage conduit it may be worth your while to investigate. Then if a question exists, call in your nearest Armco Sales Engineer.

For 50 years, Armco representatives have co-operated with municipal and highway officials inspecting failing sewers and culverts. But inspection is only the first step. What should be do Experienced Armco Sales Engineers often can help you arrive at a low-cost solution.

Whatever the condition of the conduit, there is Armco product to solve the problem economically —whether installation should be by threading, lining, jacking, boring or tunneling. Then, too, if would prefer someone else to handle the job, Armco's Construction Department will do it on a fixed-price, sub-contract basis.

For inspection service or illustrated literature, write us. Armco Drainage & Metal Products, In 6199 Curtis Street, Middletown, Ohio.
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Fill Canyon Erosion "Slivers" to Build City within a City

Almost ten years ago, two far-sighted land developers—Louis Burgener and Carlos Tavares—began changing the then barren Clairemont Mesa, seven miles north of the heart of San Diego, California, to a planned village within the city. Today, with the help of Allis-Chalmers construction machines, Clairemont has grown to a city within a city. The present 45 to 50,000 population is expected to reach 70,000 by the end of 1960... eventually will be one of the largest planned communities in the country.

A. H. JOHNSON
Lakeside, California

A. H. Johnson Handling Current Dirt Work

A. H. Johnson, working for prime contractor, R. E. Hazard Contracting Company, is using Allis-Chalmers torque converter crawler tractors and Allis-Chalmers motor scrapers on the rip-cut-fill work to prepare a unit of 100 sites. He is levelling, filling and terracing lots and cutting streets in material that runs from sandy loam to a tough conglomerate of cobblestone and adobe. In the early stages of this unit, the material was so abrasive even the toughest ripper teeth had to be replaced frequently.

Fills Carefully Compacted

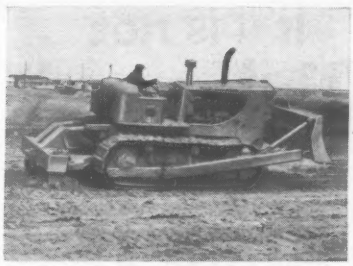
Clairemont Mesa is cut by canyons with eroded "slivers" along each side. These slivers are filled and compacted...carefully checked every foot of lift...to create good, stable homesites along trim, scenic canyons.

Johnson's Allis-Chalmers torque converter crawlers provided the big power necessary to rip the toughest material on the mesa. They also push-loaded the Allis-Chalmers motor scrapers. Most of Johnson's motor scrapers are hydraulic units which used their double-acting bowl jacks to good advantage biting down into the material and getting loads that paid on every pass. Double-acting bowl jacks are available only on Allis-Chalmers hydraulic motor scrapers.

The fact that Johnson's Allis-Chalmers TS-260 motor scrapers feature 90-degree steering and require less turning area than any make of comparable size (less than 31 feet) was a real timesaver in the close quarters of the numerous sliver fills.

One of Johnson's Allis-Chalmers hydraulic scrapers is push-loaded by a turbocharged HD-21. These scrapers used down pressure and short turning radius to good advantage in the tough material and tight fills.

A. H. Johnson has found . . . as thousands have . . . that Allis-Chalmers construction machinery is designed with the tough jobs in mind. Select the correct units for your next jobs and see them in action. Your Allis-Chalmers construction machinery dealer will arrange the details.



The 225-hp, turbocharged HD-21 rips the cut to speed loading.

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HD-21 with straight dozer **TS-260**

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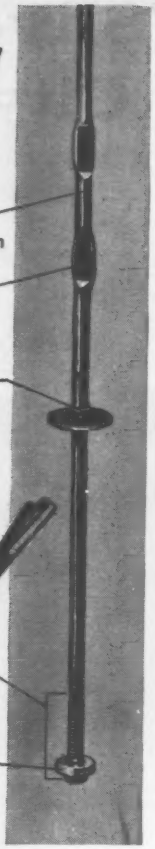

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B.F.Goodrich Rock Service tires reduce delays, save contractor up to $600 per hour

WESTERN CONTRACTING CORP. operates 2,000 vehicles to build highways, dams and air bases all over the country. Here the job is earthmoving for a new runway at Wright-Patterson Air Force Base, Fairborn, Ohio. The scraper above carries loads as heavy as 50 tons, works 22 hours a day. The tires are new B.F.Goodrich Rock Service, chosen because they substantially increase hours of service and reduce delays due to tire failure. Avoiding these delays saves the company $300 to $600 per hour in downtime expense.

Look at the husky double chevron Rock Service tread. It bites in to give maximum traction and resist sideslippage in forward or reverse. The B.F.Goodrich FLEX-RITE NYLON cord body withstands double the impact of ordinary cord materials, resists heat blowouts and flex breaks. This Rock Service body outwears even the extra-thick tread, can be retreaded over and over!

If you do earthmoving it will pay you to see the new Rock Service tire at your B.F.Goodrich Smileage Dealer's. He has a tire for every type of construction work. You'll find his address under Tires in the Yellow Pages of your phone book. *B.F.Goodrich Tire Co., A Division of The B.F.Goodrich Co., Akron 18, Ohio.*

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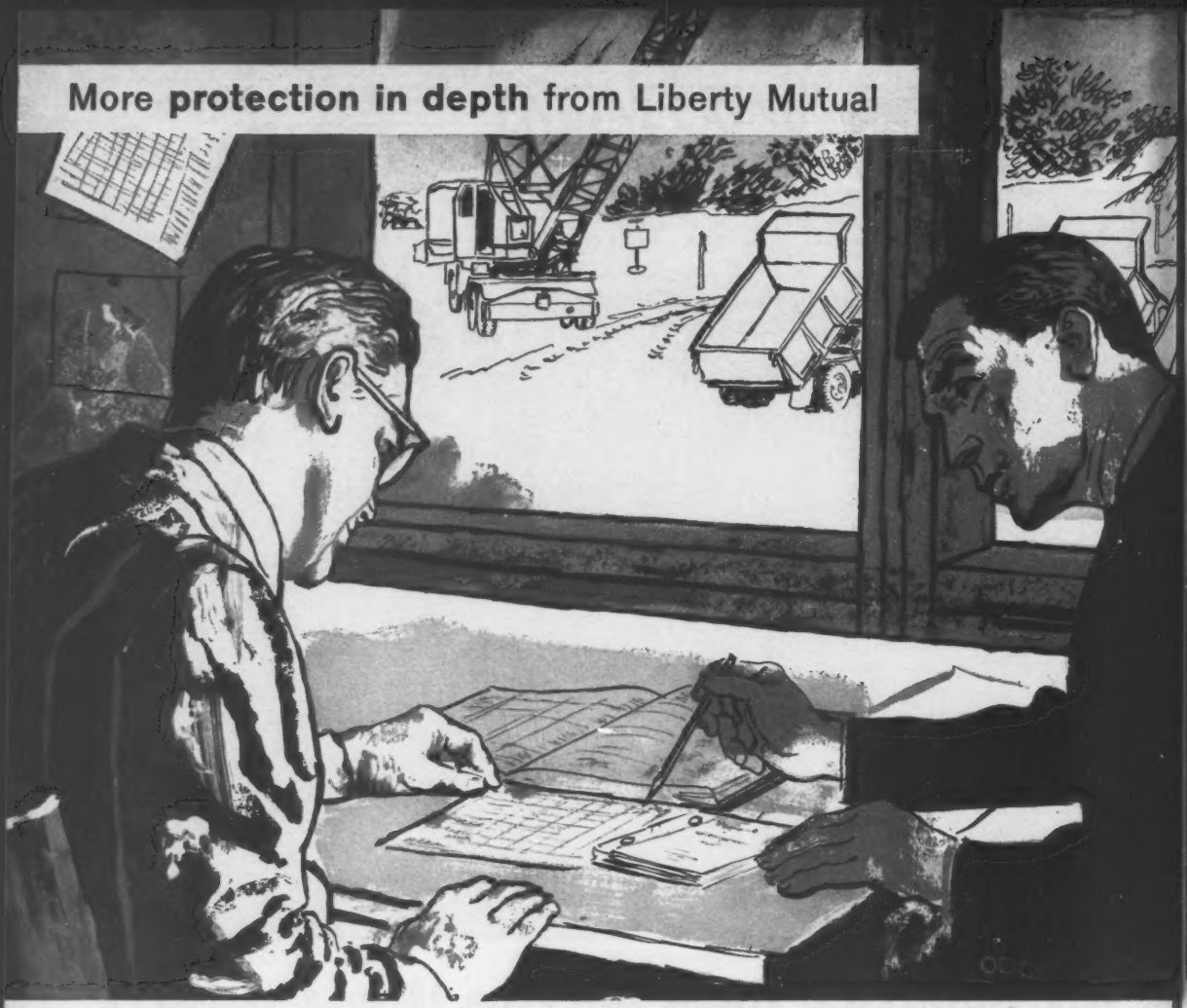

Employee classifications are reviewed by Liberty Mutual's full-time auditors. Proper ratings can save policyholder premium, make payroll distribution more accurate and easier to handle.

How Liberty's auditing service helps lower your workmen's compensation costs

Contractors can benefit substantially from the accurate pricing of workmen's compensation insurance. This pricing depends on the proper distribution of payroll by type of work performed and assignment to the proper classification. Since there are over one hundred classifications, these assignments must be made skillfully. Often a contractor can gain advantages from the complex rules limiting the amount of payroll considered in premium computations.

Our auditors perform a valuable service, over and above routine auditing, in discovering ways to save you money by proper classification assignments and by applying available limitation rules to your payrolls.

That is why so many Liberty Mutual policyholders regard our auditing service as such an important feature of protection in depth.

Currently 150 auditors travel out of our national pattern of branch offices. There are 10 billing offices to speed up service between policyholder and company. Result: fast, accurate, fair billing.

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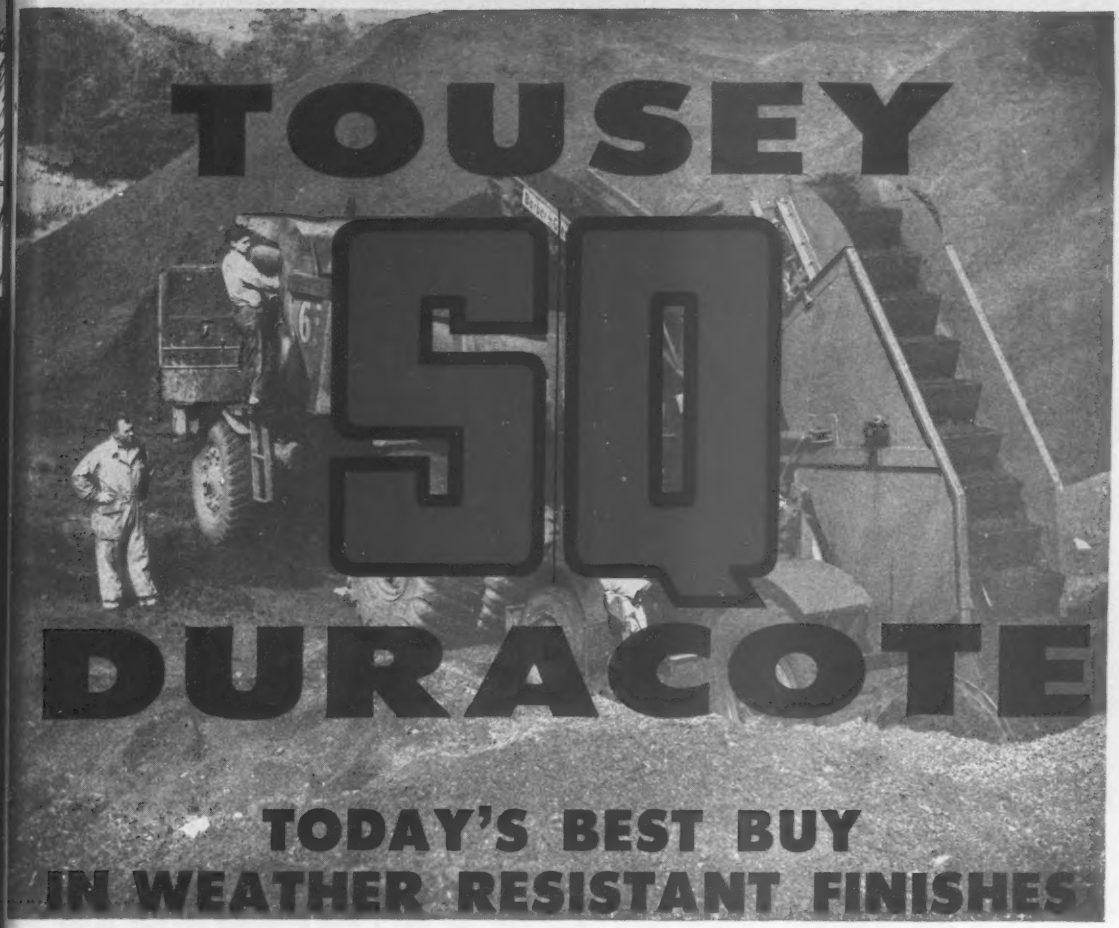

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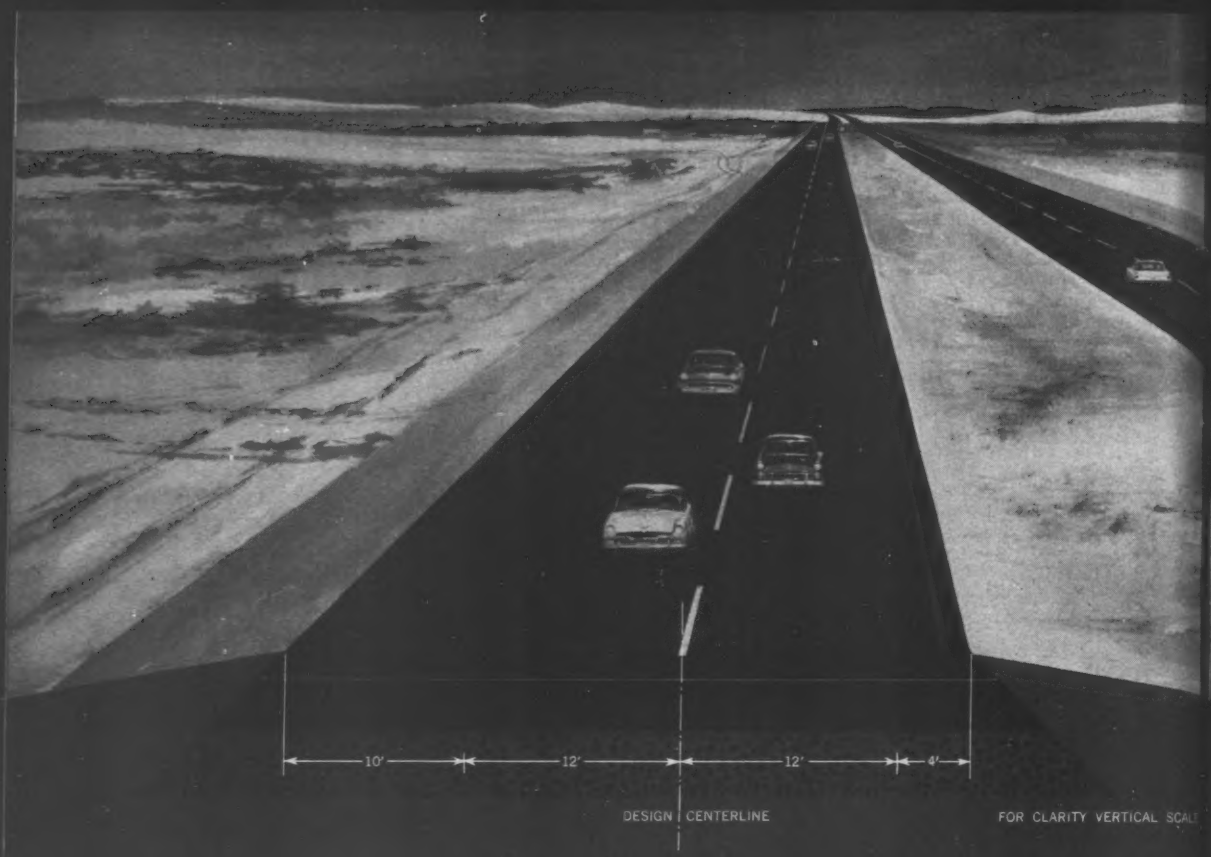


Arizona's First Interstate

Experience with veteran 2-lane Asphalt

Arizona is a big state with a low population density—which means it needs plenty of roads. But there aren't millions of Arizonans to pay for them. Every dollar counts.

These are some of the reasons why most of Arizona's roads traditionally have been of economical Asphalt construction. Time and again, since the State began to pave, Asphalt pavements have stretched available funds over more and more of these long Arizona miles than could any other pavement type.

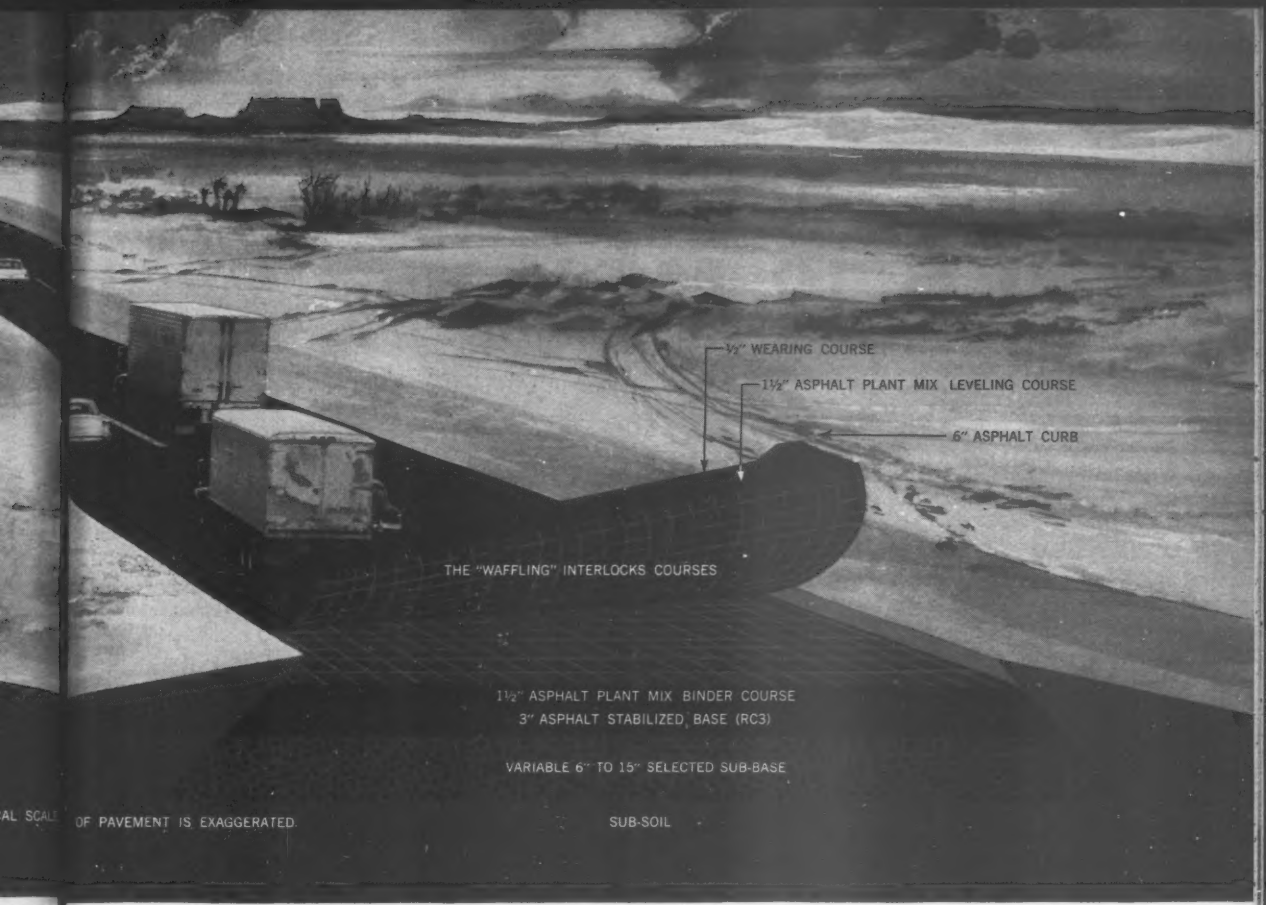
Now, along with the rest of the states, Arizona has launched a vast new road-building program. And even though more federal aid is available than ever before, these roads, too, are turning out to be Asphalt-paved. You don't have to look far for the reasons.

Arizona's veteran Asphalt-paved highways have proved themselves as rugged and durable as they were economical to build and maintain.

U.S. Route 66 between Winslow and Holbrook an example. First paved more than 25 years ago (w Asphalt and sand!), this pavement is successfully s porting heavy traffic undreamed of when it was first bu "Double" trucks by the dozen barrel over it at 60 M So does the bulk of Arizona's east-west traffic.

Now this veteran main artery, still in the pri of its life, is being given local traffic responsibilit A new divided Interstate Highway (Route 40), carry through traffic, will parallel it. The initial section Arizona's new Interstate 40 is shown above. It is a 5.6 mile stretch between Winslow and Holbrook.

With no aggregate larger than ¾ inch available (and most under ¼ inch), only Asphalt construction could have been used to build this section of pavement up to Interstate standards. Total cost of the pavement structure was $1.75 per square yard!


½" WEARING COURSE
1½" ASPHALT PLANT MIX LEVELING COURSE
6" ASPHALT CURB
THE "WAFFLING" INTERLOCKS COURSES
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VARIABLE 6" TO 15" SELECTED SUB-BASE
OF PAVEMENT IS EXAGGERATED
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tegment Asphalt-Paved!

havements leads to decision

The cross section above shows you in detail how ost Asphalt materials were used to give this pave- lasting strength despite the scarcity of aggregate.

Notice, first, the use of Asphalt e 3-inch base. This base, a y gravel, was road-mixed on the ted sub-base using RC-3 liquid alt.

Notice, second, (see right way above) that the 3-inch ng course was asphalt plant- laid down in two courses. A novel between-course lock was provided by "waffling" the lower course still hot with a 4-inch square grid pattern, impressed ⅜-inch into the surface. A tack coat was applied second course constructed. Then, a ½-inch wearing e was laid to insure a non-skid surface.

Notice, third, that both base and surface courses niform across the whole width of the road, shoulders ll as traffic lanes.

Notice, fourth, the use of Asphalt curb to provide controlled drainage, prevent embankment erosion and aid safety.

BEAT SCHEDULE BY TEN WEEKS

With today's equipment, modern heavy-duty Asphalt concrete pavement is being laid at record, reputation-building, tax-fund-conserving speeds. In this case, construction was completed 10 weeks ahead of schedule . . . in plenty of time to accommodate the bulk of the summer tourist traffic.

Modern Asphalt concrete pavement can help **you** speed your highway modernizing program. It provides, as well, strength, durability and economy in full measure. Specify it for your Interstate Highways. Primary and farm-to-market roads, too.

Ribbons of velvet smoothness...
***ASPHALT**-paved Interstate Highways*

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Cat DW21-PR21 units handle rock "on the double" on U. S. 10, Montana

When Albert Lalonde Company, Sydney, Montana, was awarded a $1,537,337 contract on a four-mile section of U. S. 10 on the Interstate System, three Cat DW21 Tractors with Athey PR21 Rear Dump Wagons were purchased for hauling the rock. A. M. Stolzenburg, Superintendent, tells why: "We ran three seasons with them in rock jobs. Now that we're back in rock again, we bought some more. They're big, rugged and an easy shovel target, have a low center of gravity and are maneuverable."

Note how these features met the conditions on this job. The units had to work in limited room on benches and steep haul roads. Material handled for fill included shot rock and sandstone. On haul lengths averaging 300 yards, the units handled 275 cu. yd. an hour. At the start of the job, they worked 8 hours a day; to finish it, 16 hours a day.

New DW21 Series G now 345 HP

Now a new DW21 Series G is matched to the 22.5 cu. yd. PR21 for even faster production on the toughest jobs. Compared with the model it replaced, it has new HP—345 (maximum output) for an increase of 8%. It also has 12% higher rimpull. This increased rimpull provides up to 20% faster travel speeds under similar haul road conditions. Equally important, the horsepower increase was achieved without any sacrifice whatsoever in the excellent torque characteristics of the Cat Super-Turbo Engine.

Get the complete facts on the Cat DW21-PR21 from your Caterpillar Dealer. Ask for a demonstration. Pick a tough job—see for yourself how this giant handles the hard work!

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

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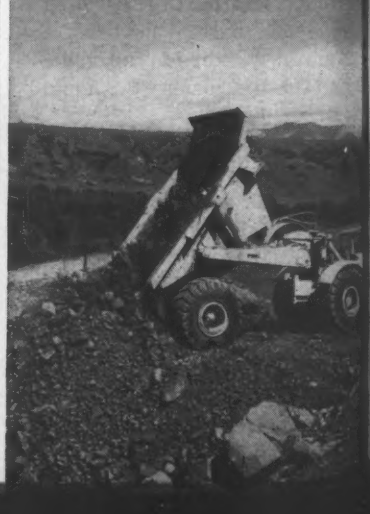
LOAD FAST! PR21 offers a big target. Short non-stop turns of DW21-PR21 unit speed spotting under shovel and work on a narrow bench. PR21's special steel withstands impact, abrasion and corrosion.

ROLL FAST! Two of three DW21-PR21 units on the job. DW21 combines high travel speed with excellent torque characteristics. The PR21 has a 22.5 cu. yd. heaped and 62,000 lb. capacity. All this adds up to fast cycles, top production.

DUMP FAST! PR21 has hydraulic hoists for quick and complete dumping of any material. DW21's hydraulic steering facilitates maneuvering. Wide-section, tubeless tires provide maximum flotation and sure traction.



Reader Comment

Causes of Collapse

SIR—I must correct the interpretation that Mr. McAllister has drawn (ENR August 13, p. 9) from my earlier comments (ENR July 16, p. 7).

I do not, in any way, condone "reliance on an intangible and unreliable support" such as curtain walls and partitions that had not been counted on structurally. I merely wished to point out that some structures have stood up under lateral load more by accident than by design.

Curtain and permanent partition walls of the proper materials and design, acting with floor and roof system, can be safely employed to resist lateral loads. When used thus, the wall details should be adequately shown or specified in plans and specifications to assure their acting as assumed.

Some clarification is also needed regarding the matter of building departments' responsibilities on structural design. A primary function of a building department is to judge whether a design appears adequate for its purpose and complies with the building code. When a design does not provide resistance to lateral load, it violates every building code known to the writer. Building departments with which the writer has had dealings have all been staffed with competent engineers who quite often refuse building permits to inadequately designed structures (nearly all of which are submitted by unlicensed designers or amateurs). If Mr. McAllister must deal with "unlicensed plan examiners," he has my sympathy.

I do not wish to give the impression that a building department can relieve the designer of any responsibility—it cannot. The designer must be fully responsible for his designs. Rather, the building department is one of several safeguards which should reduce the number of structural failures. Other safeguards are hiring reputable contractors and adequate inspection.

My comments were intended as general comments not specifically applicable to the Westbury failure. I would not presume to determine the cause of that failure nor place the blame from such little information as was published.

JAMES CHINN
Associate Professor
University of Colorado
Boulder, Colo.

(*Reader Comment continued p. 16*)

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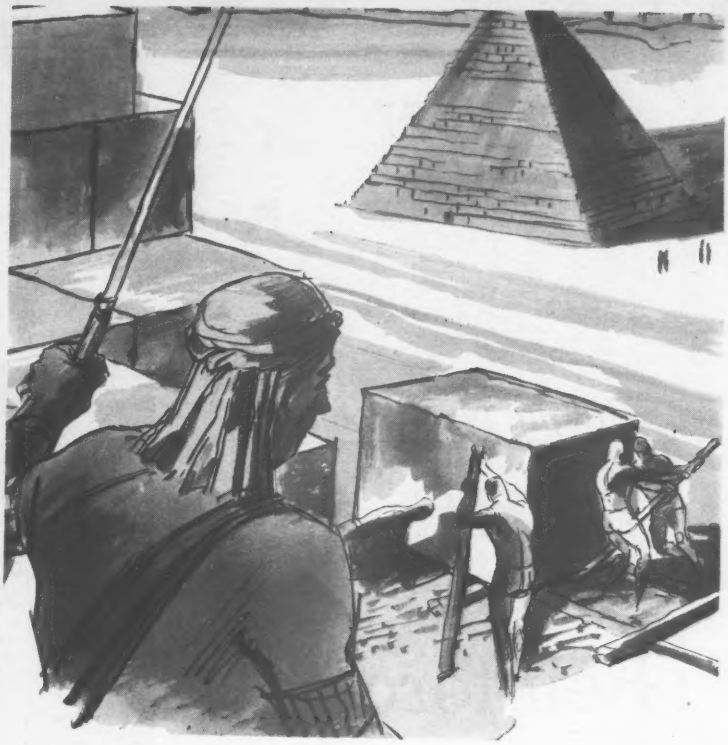

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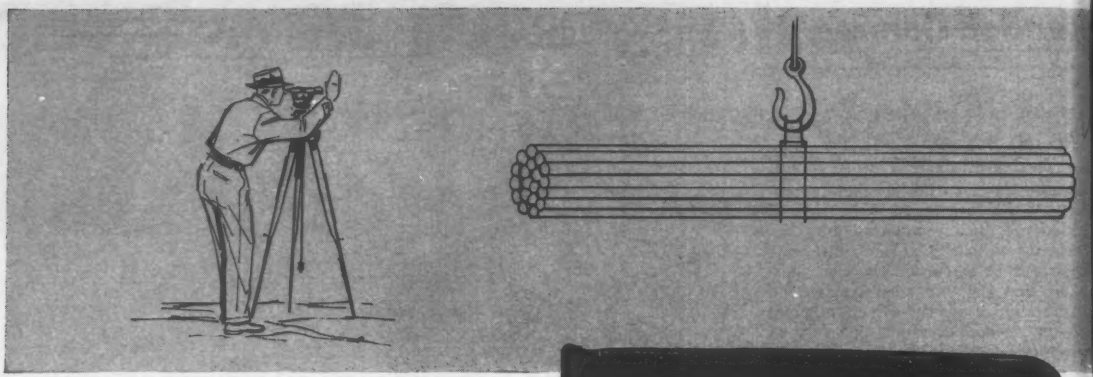

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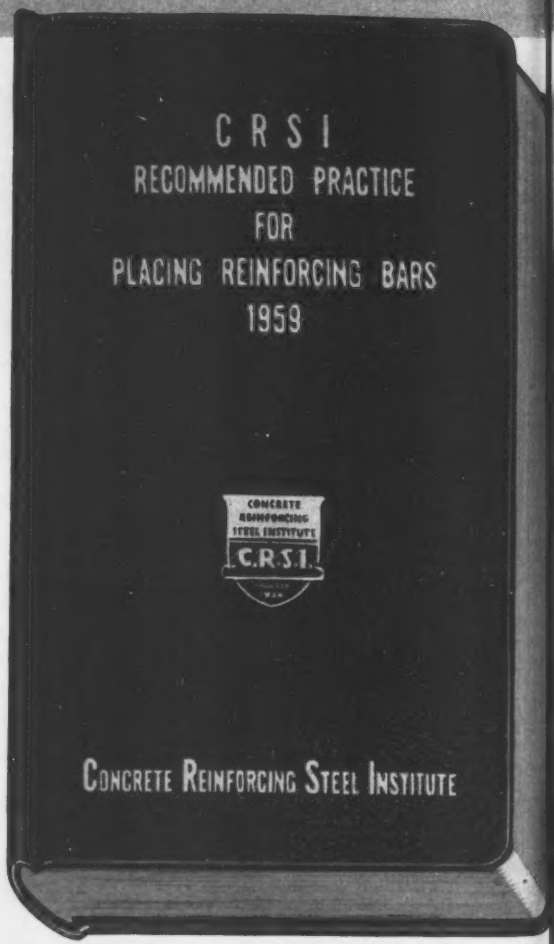
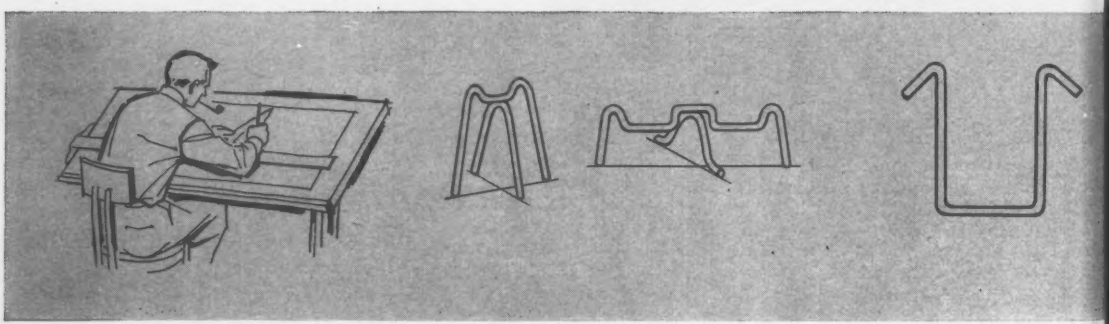
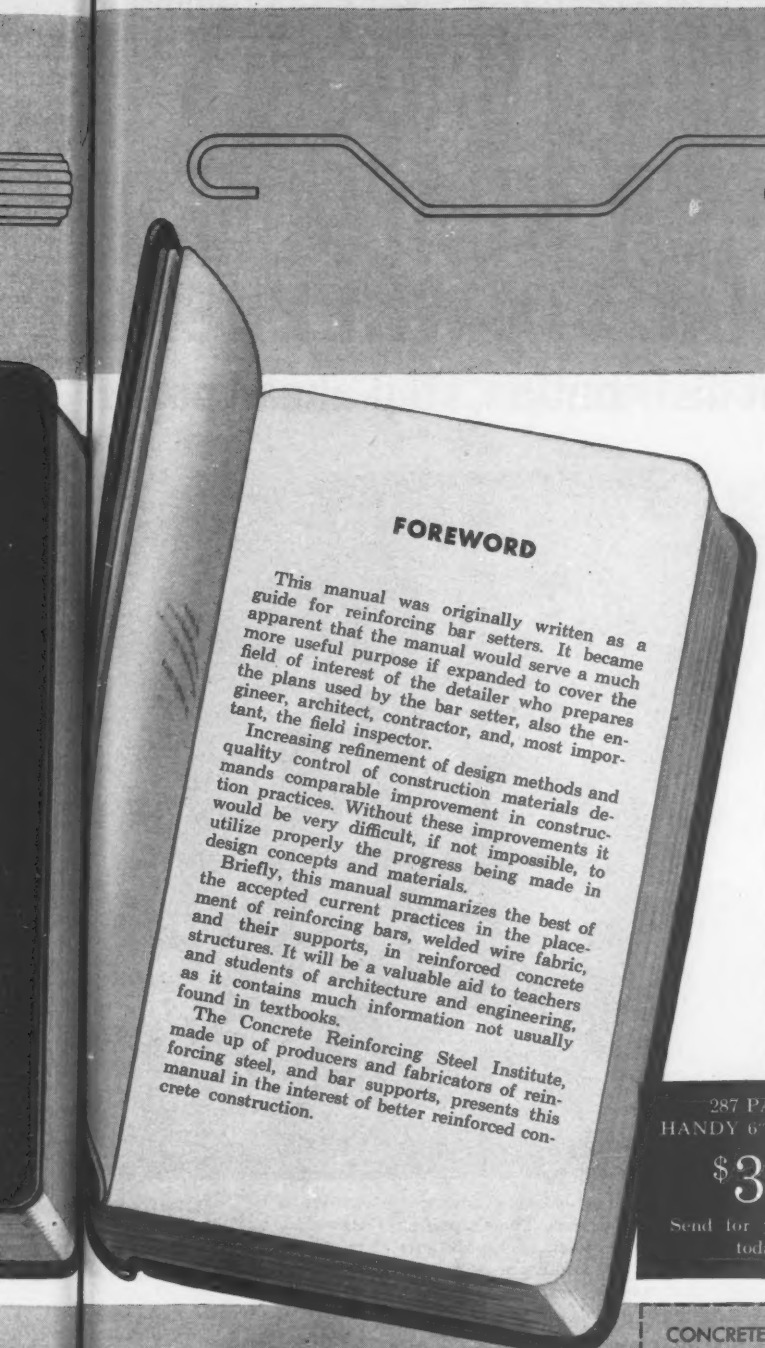
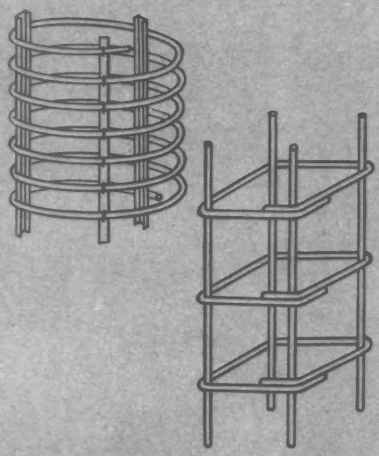
Contains specifications and instructions for placing reinforcing bars, welded wire fabric, and their supports, in reinforced concrete structures.

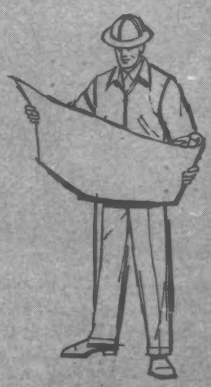
Now, for the first time, men in the construction industry have in one handy, pocket-size book the complete story on "how to place reinforcing bars." The new CRSI book—"PLACING REINFORCING BARS"—contains much valuable information and many practical hints not available in textbooks. This book clearly tells the man actually *setting* reinforcing bars how to unload, handle, and place reinforcing bars, welded wire fabric, and their supports; what the bar setter should know about the duties of the people and trades he meets on a job; also reading plans, types of reinforced concrete construction, individual concrete members, and why bars are needed and *where*. Priced at $3.00.






FOREWORD
This manual was originally written as a guide for reinforcing bar setters. It became apparent that the manual would serve a much more useful purpose if expanded to cover the field of interest of the detailer who prepares the plans used by the bar setter, also the engineer, architect, contractor, and, most important, the field inspector.
Increasing refinement of design methods and quality control of construction materials demands comparable improvement in construction practices. Without these improvements it would be very difficult, if not impossible, to utilize properly the progress being made in design concepts and materials.
Briefly, this manual summarizes the best of the accepted current practices in the placement of reinforcing bars, welded wire fabric, and their supports, in reinforced concrete structures. It will be a valuable aid to teachers and students of architecture and engineering, as it contains much information not usually found in textbooks.
The Concrete Reinforcing Steel Institute, made up of producers and fabricators of reinforcing steel, and bar supports, presents this manual in the interest of better reinforced concrete construction.





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A Valuable Aid for APPRENTICE AND JOURNEYMAN BAR SETTERS, INSPECTORS, SPECIFICATION WRITERS, DETAILERS, TEACHERS AND STUDENTS OF ENGINEERING. CONTAINS USEFUL INFORMATION FOR ARCHITECTS, ENGINEERS, AND CONTRACTORS.

Prepared under the direction of the Engineering Practice Committee, Concrete Reinforcing Steel Institute, by R. C. Reese.

CONCRETE REINFORCING STEEL INSTITUTE
38 South Dearborn Street, Chicago 3, Illinois

I am enclosing $3.00. Please send me a copy of "CRSI Bar Placement Manual." If not completely satisfied, I will return the book within 10 days for full refund. (No C.O.D. orders accepted.)

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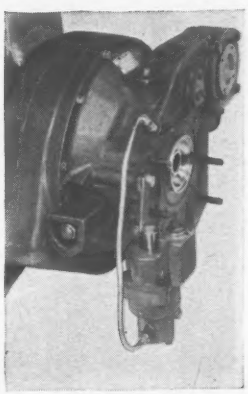

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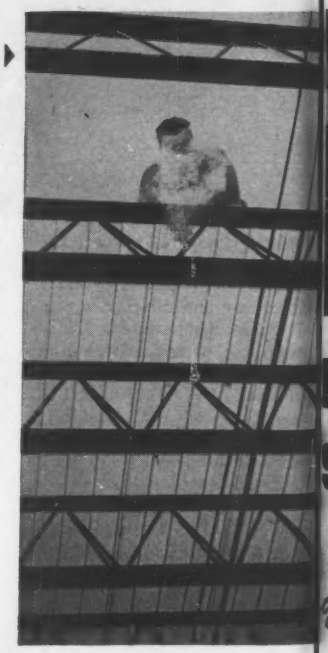

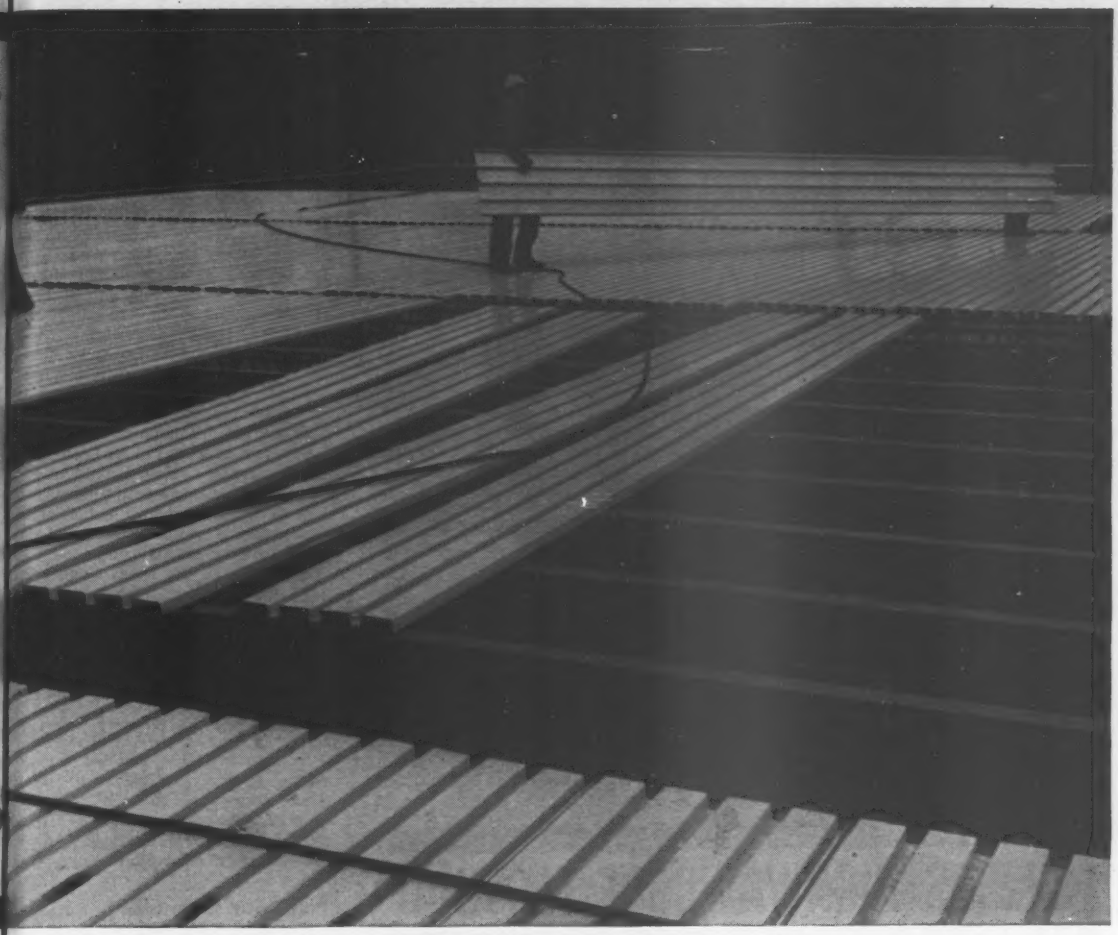

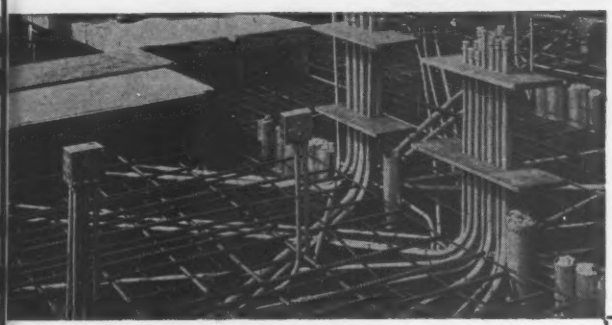

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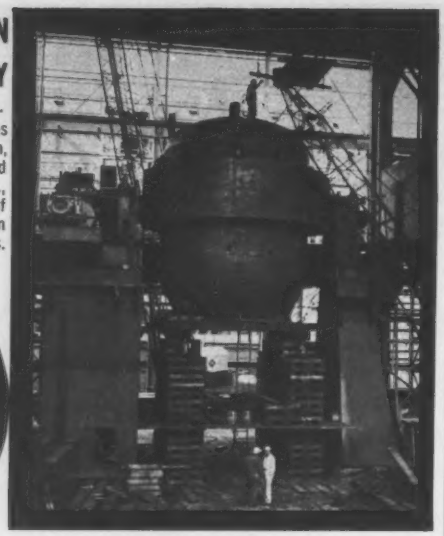

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. . . Reader Comment

Hails Steinman

SIR—I was greatly and pleasantly impressed by your article on Dr. Steinman (ENR June 25, p. 57.)

The thought-provoking question you propound in the article—"What will his contemporaries remember him for?"—arrested my attention. While he has unquestionably accomplished the impossible in engineering and is known to have placed at the disposal of many deserving youths engineering careers normally beyond their reach, he will be best remembered for his humanitarian attitude towards his fellow men and for the human aspect which permeates all his professional dealings.

History cannot fail to record the many bridges which "could not be built," but became a reality through the ingenious and steadfast belief of this man. But it is the "human quality" of Dr. Steinman that surpassed.

As editor of the Kings County Professional Engineer, I shall never tire to sing the praises of the greatest Human Engineer, D. B. Steinman.

IRVING J. LAKE
Brooklyn, N. Y.

Gail, Not Fail

We erroneously identified the consulting engineer on the earth-freezing job ("Deep Freeze to Keep Shaft in the Dry" ENR Sept 3, p. 25) as Charles Fail. The name is Charles P. Gail. We had the town right—Painesville, Ohio.

For Your Calendar . . .

Urban Land Institute, meeting for shopping center operators and community developers, Queen Elizabeth Hotel, Montreal, Can., Oct. 1-3. Write: Urban Land Institute, Ring Bldg., 1200 18th St., N. W., Washington 6, D. C.

Atomic Energy Commission, symposium on industrial uses of reactors, Commission Auditorium, Germantown, Md., Oct. 1. Write: Director, Division of Reactor Development, U. S. Atomic Energy Commission, Washington 25, D. C.

Federation of Sewage and Industrial Wastes Association, annual meeting, Statler Hilton Hotel, Dallas, Tex., Oct. 12-15. Write: Federation of Sewage and Industrial Wastes Associations, 4435 Wisconsin Ave., Washington 16, D. C.

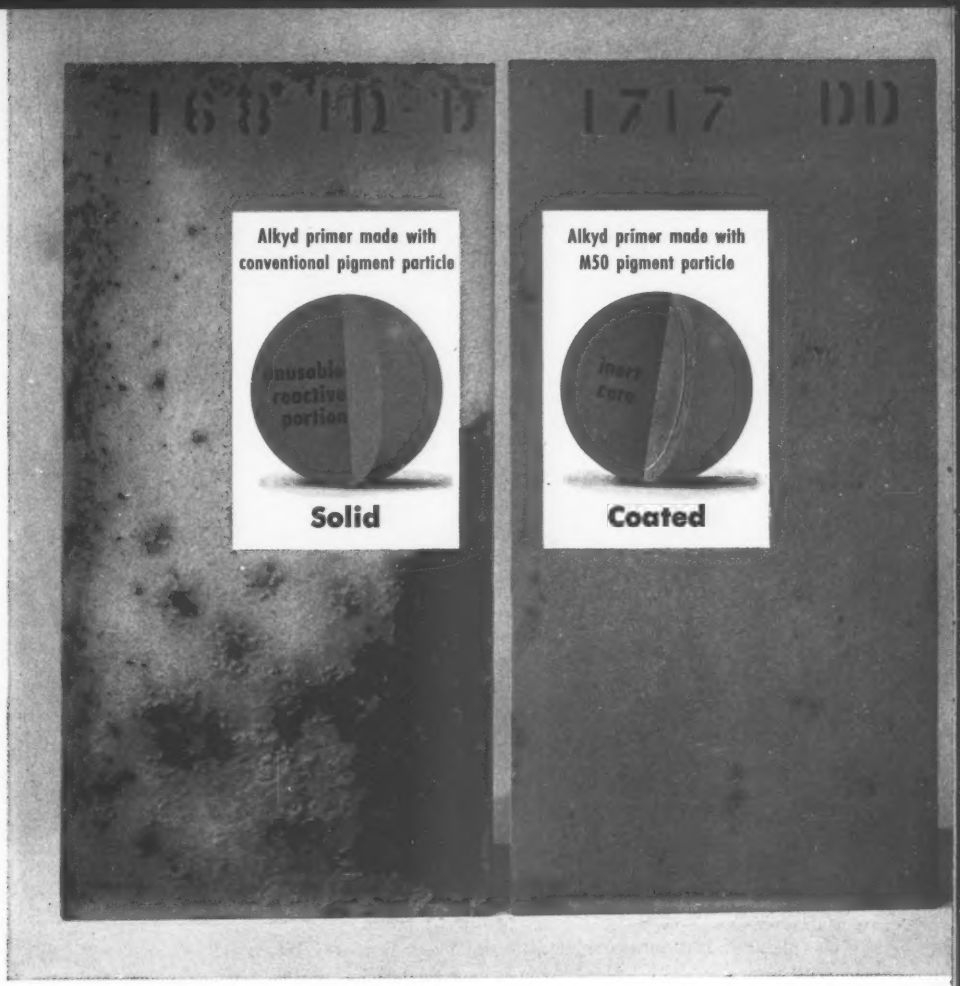
National Safety Congress Construction Section, Hotels Conrad Hilton and Morrison, Chicago, Oct. 19-21. Write: Clement J. Luepke, Staff Representative, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

American Public Health Association, annual meeting, Convention Hall, Atlantic City, N. J., Oct. 19-23. Write: American Public Health Association, 1790 Broadway, New York, New York.

American Society of Civil Engineers, annual convention, Hotel Statler, Washington, D. C., Oct. 19-23. Write: ASCE, Engineering Societies Building, 33 West 39th St., New York 18, New York.

National Safety Congress Construction Section, Hotels Conrad Hilton and Morrison, Chicago, Oct. 19-21. Write: Clement J. Luepke, Staff Representative, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Society for Experimental Stress Analysis, annual metting, Pick Fort Shelby Hotel, Detroit, Mich., Oct. 21-23. Analysis, P. O. Box 168, Cambridge Write: Society for Experimental Stress 39, Mass.



Never before such durable metal protection

Proof M50 pigment Defense in Depth paints deliver up to 300% greater content of rust-inhibitive ingredient

Painted with M50 Defense In Depth paints

Exposure tests make it plain! Paints containing M50* basic lead silico chromate pigment do more to prevent rust. Look at the panels above. These primers were applied (2.0 mils, dry) over rust and mill scale (to intensify severity of the tests), then exposed 12 months at Perth Amboy, N. J. in an industrial atmosphere and 12 months at Sayville, L. I. in a normal atmosphere at 45° South. Clearly, the rust arresting action of M50 pigment is significant.

Research analysis of tests like this prove an *M50* pigment Defense in Depth paint provides substantially more rust-inhibitive action than comparable paints made with conventional pigments. You can see one reason for this. The configuration of the *M50* pigment particle provides a more efficient way to take advantage of the well-known rust-inhibitive properties of the active ingredients (fused lead chromate).

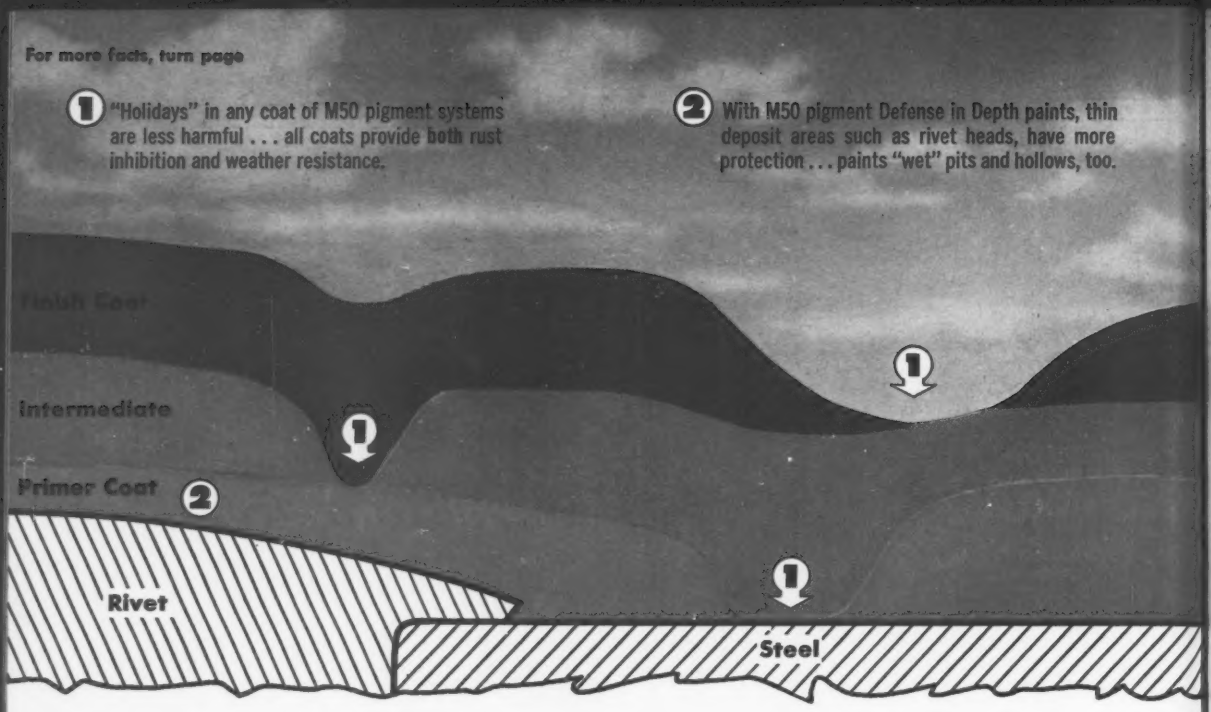
Second reason for the improved anti-corrosive action of *M50* Defense in Depth paint systems is the versatility of the *M50* pigment. Unlike other rust inhibitors, the inert-core particle is technically desirable and economically practical for use in intermediates and finishes . . . not just in primers alone. *Each* coat in an *M50* pigment system can be given substantial rust-inhibitive properties in its own right. Hence total rust-inhibitive pigment content of some *M50* pigment systems exceeds the rust-inhibitive content of comparable non-*M50* pigment systems by as much as 300%.

See on the next page other ways *M50* pigment Defense in Depth paints step up metal protection. See also how National Lead is prepared to help you get these superior specification products from your regular paint suppliers.

*Registered trademark of **National Lead Company**

General Offices: 111 Broadway, New York 6, N. Y.

For more facts, turn page


1 "Holidays" in any coat of M50 pigment systems are less harmful . . . all coats provide both rust inhibition and weather resistance.
2 With M50 pigment Defense in Depth paints, thin deposit areas such as rivet heads, have more protection . . . paints "wet" pits and hollows, too.
Finish Coat
Intermediate
Primer Coat
Rivet
Steel

Schematic section through 3-coat M50 pigment Defense in Depth system shows new paints provide two performance extras

Information on the preceding page proves that *M50** pigment Defense in Depth paints deliver inherent rust inhibition well beyond that available in other anti-corrosive paint systems.

Diagram above shows two additional performance extras. Because *M50* pigment coats give more protection over thin deposit areas . . . because breaks in *M50* pigment coats traceable to damage or painting mishaps are less harmful . . . the need for on-the-job spot priming and touch-up is greatly reduced. Then, too, *M50* pigment primer coats are not only rust inhibitive but also weather resistant. Re-priming is rarely needed.

Other advantages of *M50* pigment paints include a broad choice of colors in all coats, with excellent tint retention.

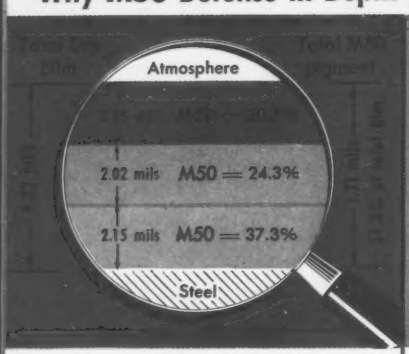
Are you responsible for steel structure maintenance?

If so, you are invited to examine exposure tests of *M50* pigment paints at National Lead's Sayville, L. I. test station. National Lead will also:—(1) send you a 24-page descriptive brochure, "Defense in Depth." (Mail coupon below); (2) provide technical aid in test applications; (3) help you develop suitable specifications for paints containing *M50* pigment.

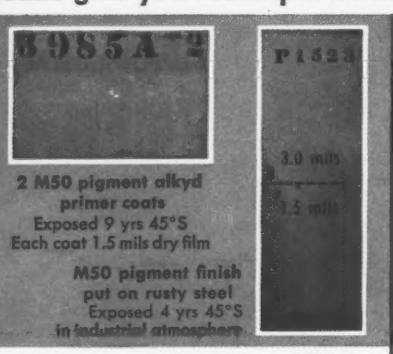
For M50 pigment paints themselves, contact your regular suppliers.

*National Lead Company trademark for a basic lead silico chromate pigment

Why M50 Defense in Depth paints give you metal protection beyond all former concepts



In every coat...rust inhibition! Fused lead chromate is noted for rust-inhibition. The *M50* pigment particle structure permits paint makers to include large proportions of lead chromate in all coats of anti-corrosive systems.



2 M50 pigment alkyd primer coats
Exposed 9 yrs 45°S
Each coat 1.5 mils dry film

M50 pigment finish put on rusty steel
Exposed 4 yrs 45°S in industrial atmosphere

In every coat . . . weather resistance! *M50* pigment is insoluble in water and has the excellent tint retention properties of fused lead chromate. Unlike other rust inhibitors, it actually boosts weather resistance of paints.

In every coat...your choice of colors! *M50* pigment gets along well with most tinting pigments, permits paint makers a wide range of colors...not only in intermediates and finishes but in primer coats as well. Colors stay true.

M50 Defense in Depth

National Lead Company,
111 Broadway, New York 6, N. Y.

Gentlemen: Please send me your 24-page brochure, "Defense in Depth." Include color card of the six *M50* pigment paints you recommend for steel highway structures.

Name_____ Title_____

Firm or Dept_____

Address_____

City_____ State_____

On this one, everything moved fast – including other trades!

The 6,400-ton steel framework of Four Gateway Center, Pittsburgh's newest downtown skyscraper, was topped out on April 29, just 3 months and 17 days after the first steel member was placed. Other trades followed closely on the heels of the American Bridge erecting crew as each floor of the 24-story office building was erected.

An important feature of steel construction occasionally overlooked—*immediate full strength*, is the key to safe, fast and economical construction. When a structure is built around steel, everything about the job moves fast. Not only does the framework go up faster, but other trades can move in and start work almost as soon as members are in place—rather than waiting weeks for safe conditions.

In addition to speed and strength, steel lends itself readily to all kinds of fabrication and all types of connections. (All field connections on Four Gateway Center were made with High Strength Bolts.) Steel can take rough handling, it can be shipped and stored economically, and it can be safely erected in any season. And steel construction can be readily altered and accurately inspected during and after construction.

The important fundamentals show that steel serves you best. And for the best service in steel construction, get in touch with American Bridge.

Four Gateway Center Building, Pittsburgh, Pa.

Owned by The Equitable Life Assurance Society of the United States

Designed by Harrison & Abramovitz, Architects

General Contractor: George A. Fuller Company

Structural Steel fabricated and erected by American Bridge Division of United States Steel

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General Offices: 525 William Penn Place, Pittsburgh, Pa.

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When rapidly increasing population and industrial demands are making water consumption *soar like a jet*, are your water officials forced to go along, horse and buggy fashion, with facilities designed to accommodate a previous generation?

If so, your most immediate needs are new and bigger pipe lines to supplement the old and to replace the obsolete. LOCK JOINT CONCRETE PRESSURE PIPE is the ideal material to implement this important program. Its durability and dependability assure trouble-free service for generations to come. Its initial high carrying capacity is a permanent feature, permitting accurate, long-range estimates of available supply in the distant future.

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ENGINEERING NEWS-RECORD

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THE CONSTRUCTION WEEK

PRIVATE MOVES AHEAD—Contract awards for private heavy construction forged ahead of public works in total volume this week for the first time since the industrial building boom of 1956. The nine-month score: private, $7.934 billion; public, $7.929 billion.

IS ARBITRATION THE ANSWER?—The AFL-CIO may be moving closer to arbitration as the means of settling jurisdictional disputes and other inter-union conflicts within the federation. A new peace plan, calling for arbitration of unsettled disputes on a case-by-case basis, is being presented to the federation this week. The plan covers craft-industrial union disputes as well as boycott and hot-cargo activity.

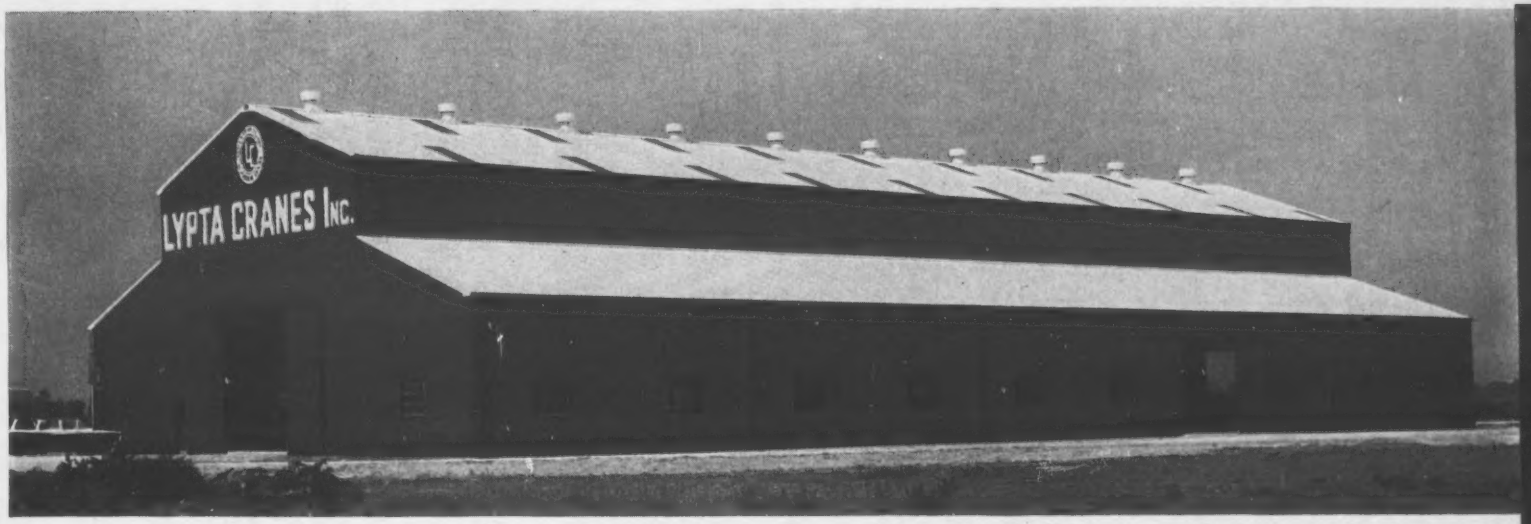
FALLOUT SHELTER GETS GO-AHEAD—The Office of Civil Defense Mobilization has granted $300,000 for construction of a fallout shelter—the first federal money to be spent for that purpose. The underground nuclear survival complex will be built as part of the $20-million Southwest Texas Methodist Hospital in San Antonio.

VOLTA ALUMINUM GROUP FORMING—Kaiser Aluminum & Chemical Corp. has accepted an invitation from the new African Republic of Ghana to form an international consortium of aluminum makers to build a smelter on the Volta River. Power would come from the proposed Volta River hydroelectric project. Kaiser Industries, parent of the aluminum firm, is already engaged in $3 million to $4 million of preliminary work for the hydro development.

FROM SLAGS TO RICHES—Copper waste slag may be transformed into steel at a $15-million plant to be erected in Clarksdale, Ariz. The mill is expected to recover iron from the waste of an abandoned copper smelter and convert it into hot steel through the "Strategic-Udy Process." Webb & Knapp Strategic Corp. formed by Webb & Knapp, Inc., New York City has exclusive rights to the process. The plant is expected to go into operation in two years.

RIVER CONTROL—The Delaware River would be under tighter control than any other U.S. river under a proposal made this week by the Water Research Foundation. The private organization released a study by Syracuse University recommending establishment of a federal-state commission to control all water development in the river basin.

NO COLORED SIDEWALKS—Baltimore has turned down a request to dye the sidewalks outside a new federal office building robin's egg blue—to match the building. "Why if we allow them to paint the sidewalks blue," exclaimed one city official, "the man in the next block will want to dye his sidewalks green."



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WASHINGTON OBSERVER

- **Gore hits quota plan for road funds**
- **Chantilly's sewage waits till next year**
- **Mortgage rates going up**

● **An expected deficit of $157 million in federal-aid highway money for fiscal 1960, and the move by the Bureau of Public Roads to put states on a uniform spending basis has drawn a sharp blast from Senator Albert Gore (D., Tenn.).**

In a letter to President Eisenhower, Senator Gore called for the federal government to take "whatever action is necessary to discharge legal and moral obligations created by apportionment of funds."

Highway Administrator Bertram D. Tallamy told Congress in executive session that even with the new increases in taxes and temporary borrowing of $359 million from the Treasury, there would still be a deficit of $157 million at the end of the fiscal year.

The deficit would mean that state vouchers for this amount would have to be held up for two to three weeks until the next fiscal year's money becomes available, Mr. Tallamy said.

Mr. Tallamy also told the legislators that because of the shortage of federal-aid construction money, the bureau would have to slap "contract controls" on states in order to get a uniform rate of spending to conform with inflow of tax receipts to the Highway Trust Fund.

In his letter to the White House, Senator Gore hit hard at the issue. "Such a procedure," he stated, "if adopted and if effective, would clearly undermine the validity of an apportionment of funds."

—

● **Solution of the issue over disposal of sewage** from the new Dulles International Airport (Chantilly) will be delayed until next year. Congress, in its scramble to adjourn, dropped from a supplemental appropriation, funds for building a sewer line from the Virginia site to connect with the District of Columbia system. Federal Aviation Agency is delaying any action on the system until Congress comes back.

—

● **Higher interest rates on FHA-guaranteed mortgages are coming.** The increase will go from the present 5¼% to probably 5¾%. That is the prediction after evaluating the discounting of 5¼% mortgages that has been going on. The Administration has little choice but to follow the trend.

Washington acknowledges this will slow housing sales. And if new starts begin to fall materially, the Administration can then offer buyers the lower down payments authorized in the housing bill Congress finally passed.

The Administration doesn't have to lower down payments and increase the maximum mortgage that will be insured. That is a discretionary power, and FHA won't act unless a severe decline seems apparent. The legislation allows a reduction in cash for houses costing more than $13,500—the biggest break would come for an $18,000 house, on which the down payment could be reduced from $1,380 to $855. Mortgage insurance can also be made available for houses costing up to $25,000, rather than the present $20,000 ceiling.

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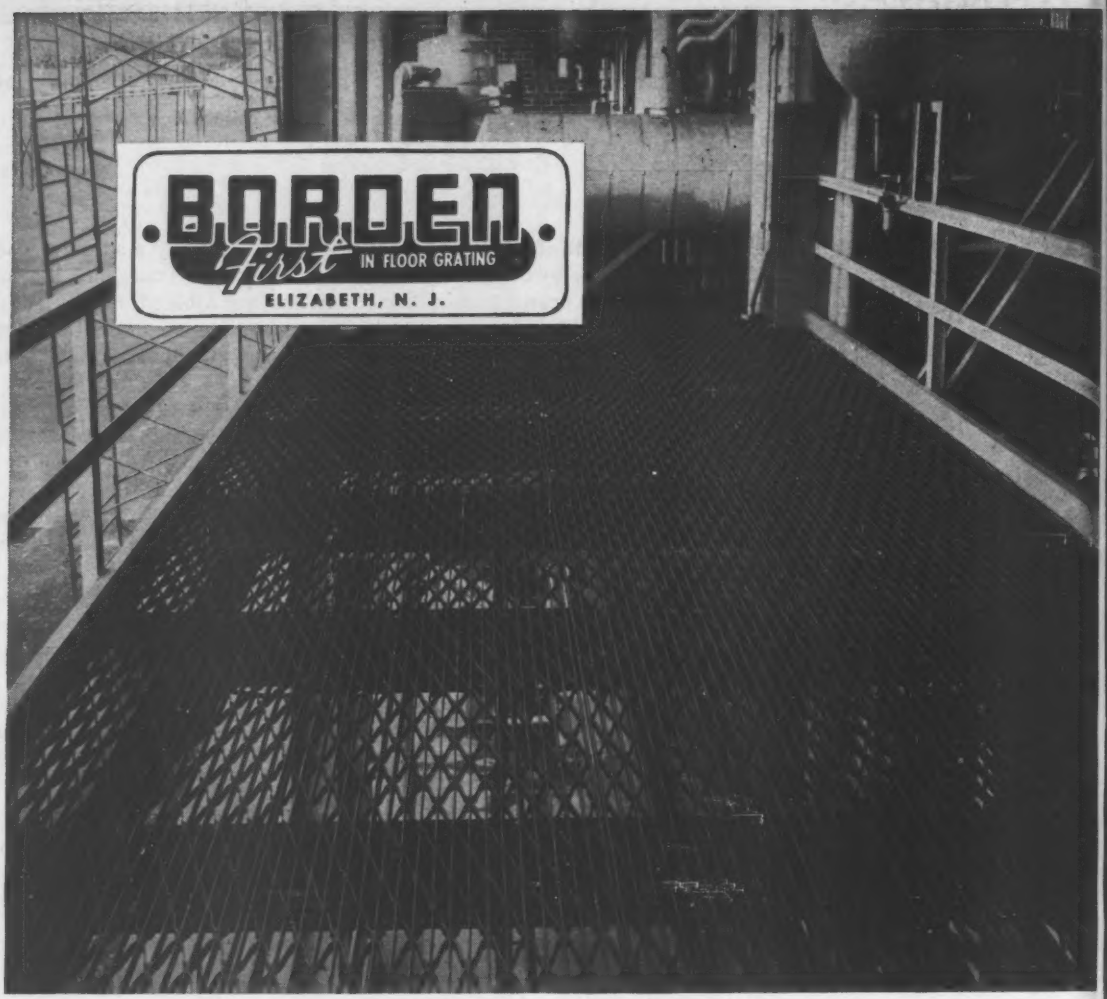

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What Congress Didn't Do

- **With the economy booming again and the President insisting on a balanced budget, Congress backed off from some big plans.**
- **Among them: federal aid to school construction and depressed areas, and grants for community facilities and pollution control.**

The first session of the 86th Congress, which adjourned last week, left behind it an impressive list of unfinished business—much of it of direct or indirect importance to the construction industry.

Indeed, a bill of interest to the industry was the pawn in a last-minute maneuver that serves to illustrate the over-all story of the first session. The measure would increase federal grants for control and alleviation of water pollution.

What happened to the bill is the same thing that happened to many another: Democrats pulled it back when it became obvious that President Eisenhower was prepared to knock it down with a veto. The program of federal aid in control of water contamination goes on under a continuing authorization that assures at least $50 million a year until the mid-1960s.

But in the first session of this Congress, Senate Democrats voted to raise the federal grants to $80 million a year. The House voted to double the going rate, making it $100 million a year.

Faced with a veto, the House and Senate did not even attempt to compromise their differences.

The Democrats still hope, but not enthusiastically, that they may be able to maneuver this—among other bills Mr. Eisenhower does not want—past the President in the session beginning on January 6.

Despite overwhelming Democratic majorities in both House and Senate—the biggest since early New Deal days—the President dominated the Congress.

He was able to dictate the course of major national policy and the theme was to hold down federal spending.

The President's determination was, of course, materially assisted by the economy's recovery in the early part of 1959 from a recession. This robbed the Democrats' legislative program, formulated in the winter months while unemployment was running very high, of its basic appeal. That program was based on the idea that the best way to help the country recover was to give massive assistance—mainly via the time-tested construction route. That accounts for the heavy construction tone in the list of this Congress' unfinished works.

All pending legislation can be picked up in 1960 at the precise point to which it had advanced through the legislative mill in 1959. Those that do not succeed in 1960's session will automatically die. If they are to be considered further, they will have to be introduced anew and go through the legislative gamut from the beginning when the 87th Congress meets in 1961.

Besides the water pollution measure, these five major pending bills are basically construction measures:

• **Federal aid for school construction.** The big bill was a liberal Democratic proposal for $11.4 billion of federal expenditures—for either building or teacher salaries—in a four-year period. A Senate labor subcommittee held hearings, but took no further action. The House Education and Labor Committee voted out, on June 8, a $4.4-billion, four-year measure. But the ultraconservative House Rules Committee refused to clear it for House passage.

• **Aid for depressed areas.** The Senate passed early this year a $389.5-million bill proposing federal loans and grants for areas suffering from chronic unemployment—particularly such places as the former textile centers of New England, and the coal and railroad centers of Pennsylvania, West Virginia, Kentucky and Illinois. The House Banking Committee cut the proposed expenditure to $251 million, but, like the school aid bill, this one is still languishing before the Rules Committee.

• **Community facilities.** The purest construction bill, this measure called for $1 billion of low-interest, long-term loans for building such things as waterworks, sewage treatment plants, industrial parks and service roads. It got hearings in the House Banking Committee, but no further action. In the Senate not even hearings were held.

• **The whole issue of bid shopping**—the requirement for prime contractors to specify subcontracting on government projects—will be up again next year. This session, proponents were not able to get serious consideration.

• **Retirement for self-employed** legislation is pending, as well. That is the legislation (Keogh-Simpson bill) that has passed the House to permit consulting engineers, doctors, lawyers, and the like to make a tax deduction for payments into their own retirement plan. The American Medical Association and other professional groups will try hard to get Congressional approval next year, but odds are still against it.

Of those five, the first two—school construction and depressed areas—have the best chances for passage in 1960. The community facilities bill, designed purely as an antidote for a nationwide business recession, has little chance unless business goes into a new decline.

These assumptions are based on the feeling that Democrats, having failed to create a bright political image in 1959, will be less timid about the possibility of drawing Presidential vetoes. The Democrats will need some hard issues, all the more so as the Presidential campaign draws near. And legislation—veto or no veto—is the quickest way to produce issues.

In addition to the big bills with predominant construction features, there are several others with less direct, but nonetheless important, implications for the construction industry.

Democrats are expected early in the next session to jam through a rise in the minimum wage (to $1.25 per hour, from $1) accompanied by an extension of its coverage to some 10 million new workers, mainly in the retail trades. A Senate labor subcommittee approved the measure in the session just concluded, but the House Labor Commit-

tee did not get around to holding hearings.

Tax cutting, a subject of interest to everybody, will be discussed, but there is little reason now for any expectation that Congress will vote reductions.

Two "sleepers" of sorts must be taken into account in contemplating the course of the next session. One is "something for the old folks." A special Senate committee, headed by Sen. Pat McNamara (D., Mich.), is due to report next January with its recommendations for federal steps to improve health care, housing, and employment opportunities for the 16 million Americans now past age 65. The pending legislative proposal that has received most attention in this area is by Rep. Aime Forand (D., R. I.) and Sen. Wayne Morse (D., Ore.) to increase social security taxes to provide free medical insurance for older citizens.

The second "sleeper," which has not yet even reached the serious talking stage, is federal construction of civil defense shelters. This is the sort of issue, however, that could flare up overnight into a serious one.

In the dying hours of the first session of this Congress, Sen. J. William Fulbright (D., Ark.), the studious Chairman of the Foreign Relations Committee, addressed his colleagues somberly about some basic needs:

". . . Not just a little more, but a great deal more, on our public school system," and among other things "an adequate, serious program of building civil defense shelters. Our neglect in this field has been shameful and may be fatal."

"I do not know," said Senator Fulbright, "how much all these things would cost. I do know we can afford them if we decide we want them badly enough."

If a special session is not called before January, Democrats will be confronted again with Mr. Eisenhower's demand to raise the 4¼% interest ceiling on long-term marketable government bonds. Mr. Eisenhower holds the matter so crucial in his fight to curb inflation that, even as the first session adjourned, there was serious speculation about the possibility of a special session.

Another fight between the President and Congress over public works is probable. There had been some prospect that Mr. Eisenhower would abandon his policy of no new starts. That now seems unlikely, especially since Congress forced on the Administration 67 unbudgeted, unwanted projects.

What Congress Did Do . . .

Housing— Allocated $1 billion, including 650 million for urban renewal, $50 million in direct loans for housing for the elderly and authorizes 37,000 new public housing units, a new schedule of lower down payments on mortgages and insurance of $8 billion on new mortgages (ENR Sept. 17, p. 48).

Public Works— Allocated $1.8 billion, including $804 million toward 67 new construction projects (ENR Sept. 17, p. 45).

Trinity Dam, Calif.— Appropriated $2.4 million to start construction. Project will eventually cost $60 million. Rejected partnership bid with Pacific Gas and Electric Co. (ENR Aug. 20, p. 21).

Highways— Tagged one cent more per gallon on gas for a total tax of four cents per gallon. Diverts $2.5 billion in excise tax from the Treasury's General Fund to the Highway Trust Fund (ENR Sept. 17, p. 42).

TVA— Authorized agency to issue bonds up to $750 million outstanding at one time. TVA expects to hit this ceiling in next five years (ENR Aug. 13, p. 25).

Labor— Restricted boycotts and organizational picketing. Banned hot-cargo clauses. Granted some construction industry exceptions including right to use pre-hire labor conrtacts. Protected union members from corruption and abuse by union officials and employers (ENR Sept. 17, p. 41).

Military Construction— Approved $1.36 billion for new military construction, only $39 million less that requested (ENR Aug. 27, p. 23).

Airports—Called for two-year continuation of present grants of $63 million per year. Cancelled some plans for Air Force and Army aircraft and missile bases (ENR June 25, p. 17, 19).

Road Plans Wrong?

Concentration should be on urban areas, meeting told

The federal highway program is "far out of perspective" and needs a complete overhauling. So said T. T. Wiley, New York City's Traffic Commissioner, at the 29th annual meeting of the Institute of Traffic Engineers, held in New York City last week.

The real need for highways is in the mushrooming urban and suburban areas rather "than rural areas where traffic congestion is a negligible problem," Mr. Wiley argued.

The commissioner called for a complete overhaul of the present emphasis on needs, construction priorities and funds distribution.

Another big problem facing urban areas is keeping pace with the federal program, Mathew C. Sielski, outgoing president of ITE, warned. While the program will produce an extensive arterial highway system, existing streets and highways will have to bear the brunt of distributing this traffic, Mr. Sielski pointed out.

One-way traffic operation on city streets was cited by both Mr. Sielski and Mr. Wiley as one of the most effective ways to handle this problem.

The urgency of the problem was illustrated by the fact that traffic volumes predicted 10 years ago for 1970 were exceeded in 1954. It was also brought out that traffic problems will at least double in the next 10 years unless they are forestalled.

The fight by traffic engineers to achieve complete recognition cropped up again at the meeting of 800 of the nation's top traffic experts. Commissioner Wiley urged the traffic engineers to "overcome their inferiority complexes" and insist that traffic control is a matter for professional judgment.

The traffic engineering profession has the techniques to cope with the traffic problem, but it is sometimes difficult to persuade public officials to adopt them, Mr. Sielski said.

The importance and necessity of the automobile in solving urban transportation problems was stressed by the traffic men. While railroads are vitally important to transportation, they cannot meet the need filled by the automobile, Mr. Sielski said.

Technical sessions included papers and discussions on traffic planning and control, signing for vehicles and pedestrians, and coordinating streets with the federal highway system.

Edward G. Wetzel of the Port of New York Authority succeeded Mr. Sielski as president of ITE. Alger F. Malo, Detroit Traffic Commissioner, became the first vicepresident.

Homebuyers want . . .

More Privacy and Fewer Frills

More privacy, more quality, fewer frills and gadgets—these were the keynotes of a growing conservative trend in homeowners' desires noted at the 1959 Family Conference on Housing last week in Washington, D. C.

It was the fourth annual conference sponsored by the National Association of Home Builders and nine industry groups. And it added two new dimensions in the selection of its 90 delegates: Men and teenagers were represented—the first three conferences were limited strictly to the woman's point of view.

Privacy was stressed repeatedly by the delegates this year. Shielded yards, less window space toward the street, private rooms for dad and the kids to get off to themselves. A separate recreation room (preferably in the basement), a den, workshop, or some sort of retreat for the head of the house, a separate dining room (an L-shape as minimum), bedrooms large enough for a desk and reading chair and a separate foyer or entrance hall—all these won strong backing from the delegates, indicating that the wide open type of interior architecture may be on the way out.

Quality construction—tempered by what the homeowner can afford—also won a considerable following. Brick exteriors outstripped wood in the delegates preference, hardwood floors were preferred, and aluminum for trim and exterior uses (if its appearance can be improved) also had strong support. All delegates said they were particularly interested in the brand names of appliances in their homes, even if they have no choice in their selection. And other appliances—particularly garbage disposers—were criticized for frequent failures.

Too many frills and gadgets was another criticism of many homes. The teenagers—unanimously voting against their elders—called automatic dishwashers unnecessary, because, "You have to wash them first, anyway, before you put the dishes in the machine."

The home intercommunications system was ridiculed as "a salesman's gimmick;" picture windows were termed useless; and outdoor patios, grills and swimming pools took second-place to air conditioning inside the home.

Fireplaces continued to make a strong comeback: In fact, there was a strong desire for two in a house, if possible. Delegates wanted one fireplace in the living room; a second in either the family room or in a large master bedroom.

The delegates wanted more and bigger bedrooms, more closets and bigger kitchens. The plea for larger bedrooms appeared to be part of the desire for privacy. And the women continued pleading for larger closets and kitchen cabinet space. "I don't think we can ever get too much kitchen counter and cabinet space," one delegate pointed out.

And on the subject of kitchens, wood cabinets won hands-down over steel. The young people again surprised their elders here, voicing unanimous dislike of the "food bar" arrangement. The youngsters also felt a freezer was more important in a kitchen than a dishwasher or disposer.

Men registered an objection to placing the laundry units in the kitchen, although their wives liked the idea. Both men and women felt a return to the large "old fashioned, cheery" kitchen would be a good idea. One woman delegate said she would like a "living kitchen," the biggest room in the house, including a reading chair for her husband.

Zoned heating won strong support, along with central air conditioning. Homeowners with hot water or steam radiant heating seemed more satisfied than those with forced air systems.

There was strong support, also, for construction of a basement bomb or storm shelter, built of brick or masonry under federal civil defense specifications.

The comments and suggestions voiced at the convention parallel the shift of general design preference away from single-level ranch houses and split-level designs. For some time after World War II "flat" housing sold in any form. Now, according to studies carried out by various prime lumber producers, buyers are swinging back toward the two-floor house common before the war.

Wives keeping a house seem to want the "upstairs" and "downstairs" change, which is missing in the single-level homes.

Secondly, as emphasized at the Washington conference, togetherness is taking a beating. People want to be able to get away by themselves now and then.

And the trend isn't confined to home construction, either. Apartment builders report an increasing interest in duplex apartments, almost completely gone from the building market since the war.

In New York City, several buildings have been constructed with three-and-a-half and four-room duplex units—and more are coming.

"I've liked cedar shakes so well I have installed them myself as siding and expect 20 years without maintenance."

"One of my pet peeves is a typical closet in a typical house today. It's just a hole in the wall with a shelf."

"We'll do our own landscaping, rather than take the builder's package deal."

"Aluminum doesn't go with anything—it leaves me cold. But I'd use it because of the easy maintenance."

Building for the Elderly to Boom

- **Building official predicts 150,000 to 200,000 apartment starts per year.**
- **Both sales housing and rental housing will add to the forthcoming building boom.**

Building homes for the elderly already is a bigger business than most construction people realize. But present activity in this newly recognized market gives only a foretaste of the construction spending that lies ahead in the next few years.

Both sales and rental housing will contribute to the coming boom, experts say. The rental segment, most important to persons over 60 or 65, will get a big boost from the new housing law. A new dispensation in this bill, permitting construction for profit of Federal Housing Administration rental housing to serve the elderly, will generate 150,000 to 200,000 apartment starts a year when operative builders grasp the full opportunities of the program, says Carl T. Mitnick, president of the National Association of Home Builders.

The housing bill awaiting Mr. Eisenhower's signature was hopefully counted on also to end a slight slowdown in FHA's three-year-old program for nonprofit construction of rental homes to house the elderly. FHA officials think new applications suffered a wait-and-see delay while nonprofit sponsors of projects watched Congress and the Administration battle over a new program of direct government loans to finance this kind of housing.

Some 1,600 nonprofit organizations and individuals have talked seriously to FHA field offices about applying for mortgage insurance on projects these groups propose to build. Whether they will go ahead after the new bill becomes law is anybody's guess. The bill contains a $50-million direct loan authorization, but no money will become available until a future session of Congress appropriates it.

Housing for the elderly is not dramatically different from homes for younger people. FHA stipulates certain requirements—mainly safety factors—for both the rental housing and the sales housing built under FHA mortgage insurance commitments specifically for occupancy by older persons.

Both types of FHA programs for the elderly have been in effect since August, 1956, when the housing bill of that year became law. Under the rental housing program, nonprofit organizations have found FHA mortgage insurance highly useful in obtaining loans for their projects. In the three years since FHA took hold, 12 projects have been completed and occupied. Another 37 are in various stages of processing, site acquisition, design or construction. These active projects range from 12 to 550 units in size.

There is little about these establishments to suggest the outmoded "home for the aged." The larger ones do have built-in or attached infirmaries to take care of residents when ill or injured, but otherwise they look like club residence apartment projects.

FHA aims to encourage projects that will provide for the total wants of elderly tenants, including social and recreational aids that make for happy living. But the agency's program is flexible. FHA does not attempt to dictate to nonprofit organizations that have had experience in home management and know what they want in a new project.

The selected site, for example, must be in a satisfactory environment before it gets FHA approval, but the agency does not hedge the selection with tightly drawn specifications. Sponsors themselves choose locations that enable tenants to take part in the social and civic life of the community.

Design of the housing to go on the approved site is strictly the business of the sponsor's architect. As a starting point, he has FHA's minimum property standards for rental housing, supplemented by special criteria that apply to homes for the elderly.

One requirement is basic: Any building over one-story high must be of incombustible construction and must provide an elevator or elevators. At least two elevators are required for any building of seven stories or more.

Safety, ease of movement, convenience and comfort are top objectives of the criteria. FHA standards on fire protection and means of egress for multifamily housing apply emphatically to homes for older persons. The recommended width of halls is 8 ft, with 7 ft the minimum.

For doors to living units, the agency urges a 44-in. width and sets a 36-in. requirement for all other doorways. Raised thresholds are to be avoided.

Lighting requirements call for 5 foot candles at floor level of halls and stairways, doubled at entrances to building or to stairs and at any change in floor level or slope. A night light between bed and bathroom is required in all living units.

No change in floor level is permitted within a living unit. Elsewhere, single risers are banned, and stairways must be broken by landings every three to five steps. At least one building entrance must be completed free of steps.

Heating system design requires an inside temperature of not less than 80F. The system has to provide warm floors and freedom from drafts. Acceptable air conditioning or mechanical ventilation is required wherever natural ventilation won't assure summer comfort.

Non-slip floors that require no waxing for maintenance are specified throughout. Stair treads and ramps or slopes must have non-skid surfaces. Handrails also are called for.

Minimum horizontal dimensions are established to permit wheel chair tenants to get about easily inside and outside living units. Bathrooms must have grab rails to assist a person getting in or out of the tub. Stall showers are permitted in a percentage of the units.

Where the management provides easily accessible centralized bathing facilities with an attendant to supervise and assist, half bathrooms are allowed in living units. For housekeeping units, the minimum kitchen size is 20 sq ft.

These and similar standards now in effect for nonprofit projects may have to be adjusted for the upcoming program of construction by private builders. Even so, the builders maintain that they can cut costs of rental housing for the elderly, which so far has been built by contract, presumably with a 10% profit included in the bid price.

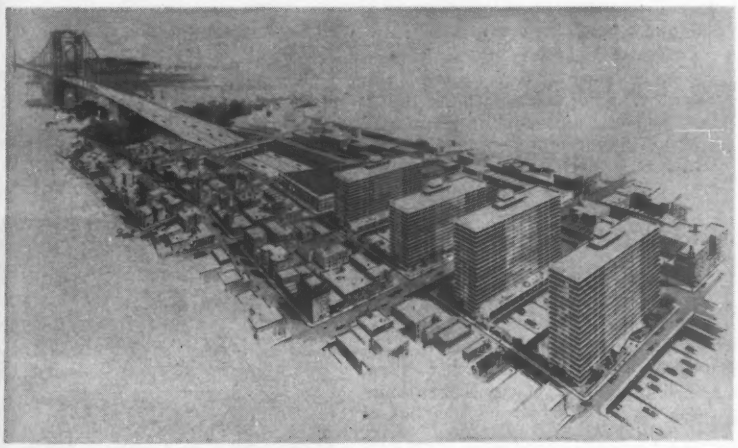
There are no set standards for FHA's program of sales housing for the elderly. Any builder who wished to advertise FHA-approved homes specifically for older people would settle the standards applicable to his houses by consultation with the nearest FHA field office.

Actually, this program arouses little interest. Its main benefit is that it allows older buyers to borrow the money for down payment and closing costs—and makes them eligible for Fannie Mae special assistance mortgage takeouts. But elderly buyers in fact have this money and more. They buy houses under the regular FHA program.

Big White Ball Protects Radar

The white sphere, mounted atop the control tower at New York City's Idlewild International Airport, is an inflatable radome that provides wind and weather protection for "taxi" radar screens.

Taxi radar is the nickname for the airport surface detection equipment program, which enables air traffic controllers to see the details of surface traffic in all areas of the airport, despite weather conditions. The 17-ft-dia dome is one of 14 produced by Goodyear Tire & Rubber Co.



Building in the Air

A builder has offered to buy "air rights" over a new approach to the George Washington Bridge in New York City. The Lefrak Organization proposes to build four apartment buildings astraddle the 12-lane depressed approach.

The buildings would rest on steel columns 40 ft or more high. Access by elevators would be from the avenues on which they front.

The bridge approach, currently under construction, has displaced more than 10,000 tenants. The new housing would be designed for these tenants, and would cost about $14 million.

The City of New York is studying the proposal.

Bridge Job to Clear Way For Highest Dam in U.S.

California's giant Oroville Dam moves a step closer next month to a construction start. The state's Public Works Department will take bids for construction of a $10-million bridge that will be the final highway-railroad relocation link necessary to clear the way for the big irrigation project.

The bridge will be a double-deck structure over the west branch of the Feather River about 11 miles north of Oroville. The top deck will connect two relocated sections of Highway 40A. The bottom deck will carry tracks of the Western Pacific Railroad.

The highway deck will be 56 ft wide and 2,731 ft long. The railroad deck will be 1,875 ft long. The bridge will rise 470 ft above streambed. Its maximum span will be 576 ft.

The Public Works Department is handling the bridge construction under an agreement with the Department of Water Resources, which has over-all supervision of the Oroville project.

Oroville Dam will be a notable structure on several counts (ENR Dec. 4, 1958, p. 24); its 730-ft height will make it the highest earthfill dam anywhere and the highest dam of any kind in the U.S.; and its 79-million-cu-yd volume will make it one of the biggest embankments in the world.

Bids to Be Asked Soon For Fifth Titan Base

The Corps of Engineers, Sacramento District, will advertise next month for bids on construction of a $42-million underground base for Titan intercontinental ballistic missiles at Beale Air Force Base, Marysville, Calif.

Bids for the Beale AFB project will be opened in November and a contract will be awarded shortly afterward. Construction time for the project will be about 22 months.

Beale AFB is the fifth Titan base to be selected by the Air Force. Lowry AFB, Denver, Colo., is the only one now under construction (ENR Sept. 10, p. 34). The Engineers will advertise before the end of the year for bids on Titan launching facilities at Ellsworth AFB, Rapid City, S. D., and Larson AFB, Moses Lake, Wash., and in January or February for the Titan base at Mountain Home AFB, Mountain Home, Idaho.

Facilities for all the Titans and some of the Atlases will be built underground. The forthcoming ICBM bases are expected to be laid out in a new pattern. Instead of having three sites of three missiles each, the future ICBM bases will have only one launcher to a site. The nine sites will be 15 miles apart, surrounding squadron headquarters.

Fans See Dodger Stadium Start

Several thousand baseball fans gathered at Chavez Ravine in Los Angeles last week to take part in ground breaking ceremonies for the new Dodger Stadium. The work started is only a "first phase" grading operation; still pending are suits to stop the Los Angeles arrangement with the Dodgers to build a stadium in the ravine.

The stadium, designed by Praeger & Kavanagh of New York City, will cost about $12 million to build. The project will include seating for 55,000 fans and parking facilities for about 16,000 cars. The stadium will be built primarily with precast concrete framing. All seats will have an unobstructed view of the field.

Builders Arrested After Collapse

Under arrest this week are the construction engineer and the building contractor of a five-story apartment building that collapsed in Barletta, Italy, last week.

As a result of the mishap, 58 persons were killed and 13 others were injured.

Four stories of the building were built five months ago on what had been a one story garage. The addition, of reinforced concrete and brick construction, contained 24 apartments.

Barletta's district attorney arrested the construction engineer, Francesco Lombardi, and the contractor, Scipione del Carmine. The district attorney heads a government inquiry team now trying to determine the cause of the collapse and to establish responsibility for the deaths and injuries.

A possible cause is a shift in the substrata of sand and clay underlying most of the Barletta area. That hypothesis was put forward by Antonio Nervi, noted designer of reinforced concrete structures and Prof. Aristide Gianelli, who is the chairman of the Rome University Department of Construction Science.

But Barletta's Mayor Michelle Palmitessa says it is evident the building's foundations couldn't support the weight of the addition.

A city employee reported that the city engineer's report shows the foundation was capable of holding only two additional stories.

It is not yet known how or whether the builders managed to disregard this recorded specification. Under Italian law, builders must deposit plans with government authorities, and official construction inspectors supervise compliance with building regulations.

Bid of $16.6 Million Takes Sunken-Tube Job

Contract for construction of a 3,350-ft tube under the Oakland Estuary between Oakland and Alameda in California was awarded last week to Pomeroy-Bates & Rogers-Gerwick, San Francisco, on their submitted low bid of $16,641,000.55.

The tube will be California's second underwater highway crossing. The first one, which also connects Oakland and Alameda, was completed in 1928.

The project will be constructed by the sunken tube method for completion in about three years.

When finished, it will carry two lanes of one-way traffic to Alameda. The earlier tube will be converted for one-way traffic to Oakland.

The job is for the California Department of Public Works.

AEC Studies Nuclear Power for Remote Posts

The Atomic Energy Commission has awarded a $515,000 contract to Kaiser Engineers, Oakland, Calif., to study the potential use of nuclear power at remote military installations.

The company will compare cost of nuclear power for installations with an expected generating capacity of 5,000 to 40,000 kw. for the period 1963-70. It will designate the type of reactor that would be most suitable at each installation and recommend the most economical method of construction.

These types of plant construction may be considered: on-site assembly and erection of components; plant fabrication with minimum on-site assembly and erection; and off-site construction of a floating mount such as a raft.

The report will also include cost estimates and construction schedules for each plant, detailed capital and operating cost estimates for nuclear and conventional plants, descriptions of proposed methods of construction.

Panama Canal Co. Asks Bids On Bridge Superstructure

The Panama Canal Co. has invited bids on the superstructure of the $23-million bridge the U. S. government is building across the Panama Canal at Balboa (ENR Jan. 8, p. 27).

A pre-bidding conference will be held in Balboa October 10. Bids will be opened December 2. The contract is in the $10-million range.

Bids will be accepted from foreign firms. The use of construction materials of foreign origin will be permitted under certain conditions. The superstructure contract will be the last large increment of work offered on the bridge.

Heavier by One Star . . .

. . . Are the shoulders of Lt. Gen. Emerson C. Itschner, Chief of Engineers, who was promoted from Major General last week. Doing the honors are Secretary of the Army Wilber M. Brucker and Mrs. Itschner.

Around the Country . . .

• **What's in a name?**—The Roosevelt Dam, Reservoir and Power Plant on the Salt River in Arizona is now the Theodore Roosevelt Dam, Lake and Power Plant under a bill signed into law by the President last week.

• **Floodgates for expressways**—Detroit's director of streets and traffic is campaigning for a system of gates that would bar approaches to the city's expressways in the event of floods or other emergencies. Stalled cars jammed the expressways during a recent heavy storm.

• **Informed taxpayers**—Rhode Islanders who live adjacent to highway construction projects get small booklets from the Department of Public Works that explain what all the bulldozing is about. The book advises them to take their complaints or problems to the resident engineers. Just so they don't miss them, the book lists their names and addresses.

• **Taking a new look**—The Maryland State Roads Commission has asked an economist to study the effect of by-passes on towns of under 5,000 population. The Bureau of Public Roads and the Washington State Highway Commission are sponsors of a recently published study of the effects of highways on adjacent retail business, residential areas and service centers.

• **Power fuel by pipe**—Four major utility companies in New York, New Jersey and Pennsylvania are considering a proposed 24-in. pipeline that would carry coal in slurry from the West Virginia coal fields to their steam generating plants.

• **Research center**—Aluminum Company of America will build a multistructure research center on a 2,400-acre tract of land at Merwin, Pa. Thus far the company has earmarked appropriations in excess of $30 million for the center.

• **High testing**—Aerojet General Corp., Azusa, Calif., is designing an eight-story steel and concrete rocket test stand capable of handling two liquid-rocket engines with a combined thrust of three million pounds.

• **Hangar job awarded**—The hangar designed with prestressed steel cantilever roof trusses for United Air Lines at O'Hare Field, Chicago, (ENR Sept. 17, p. 67) will be built by Milan Construction Corp., New York City, which was low bidder at $5,387,000.

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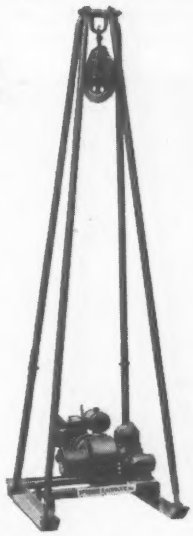
YOUR FIRST NEED IN SOIL SAMPLING
AN
S&H PIPE DRIVING WINCH
INEXPENSIVE • LIGHTWEIGHT • ECONOMICAL

A Sprague & Henwood pipe driving winch is your first requisite for normal soil sampling operations. For shallow holes there is the Model PD, and for the deeper holes, the more rugged Model PDH. Both models are furnished with a tubular steel derrick with telescoping rear legs permitting 10′ pulls. In addition to the skid mounting, there is also available a special trailer mounting that permits operation of the unit as either a skid or trailer-mounted unit. Write today for full particulars. Ask also for Bulletin #300 which illustrates and describes the complete S & H soil sampling line.



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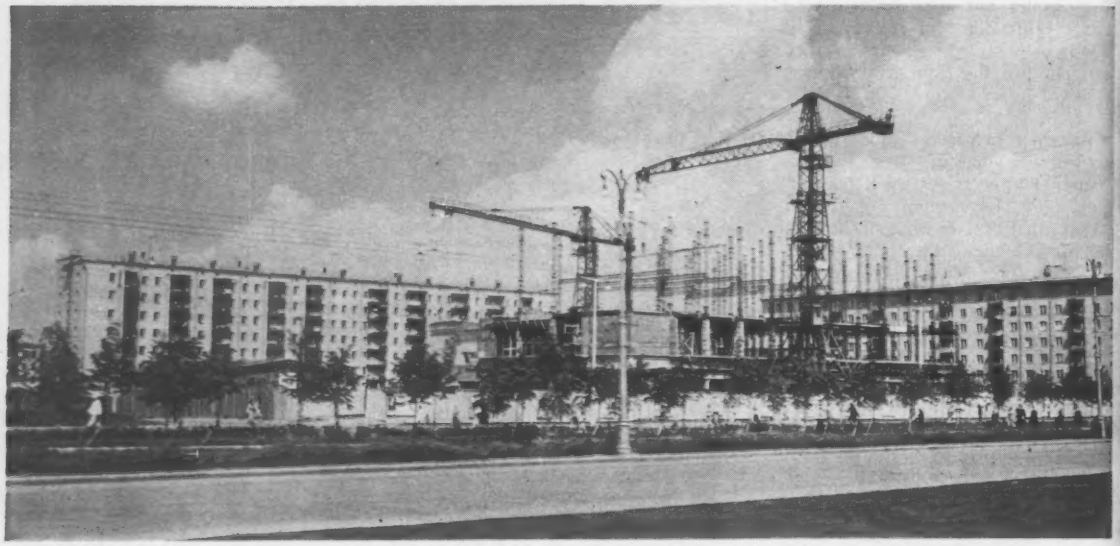
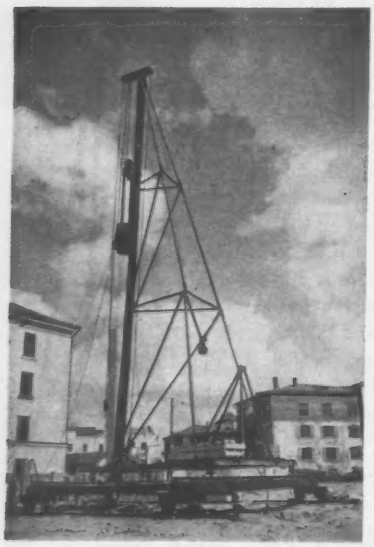
How Is Russian Building

• Impressions of a US engineer just returned from



"Many impressive projects, but there's an impressive scarcity of working labor"

"The Russians are building many one-of-a-kind housing structures looking for the best mass-building techniques. But construction is slow. Often crews will be working on only one part of one building in a group. Welders work only at night connecting precast sections at building projects. This apartment project is in Lenin Hills, a Moscow suburb."



"No vibrating pile drivers"

"This rig is the only type I could find. Though vibrating drivers are reportedly in use, no one knew where."

"There's no coordination between phases of a job"

"This Minsk water main, assembled and wrapped, had apparently sat for some time. There's no trench for it. Programs are too big for the available labor and often jobs are dormant because of materials or equipment not on hand."

ingoday?

from through Russia.

"It's massive, but lacks coordination."

So says Jacob Feld, New York City consulting engineer, after 1,250 miles of travel in Western Russia. Here are some of his pictures and comments.

"Exhibition samples are all perfect . . ."

"On the job, precast material seemed uniformly shoddy —too much so for random damage during transport. Production is apparently slipshod; joints and edges are ragged. Concrete quality was poor, too. But material is too valuable to reject; everything gets used. I didn't see any ready-mixed concrete during the entire trip."

"But there's nothing like them on the jobs"

"Old methods stand out in contrast to new ideas and equipment"

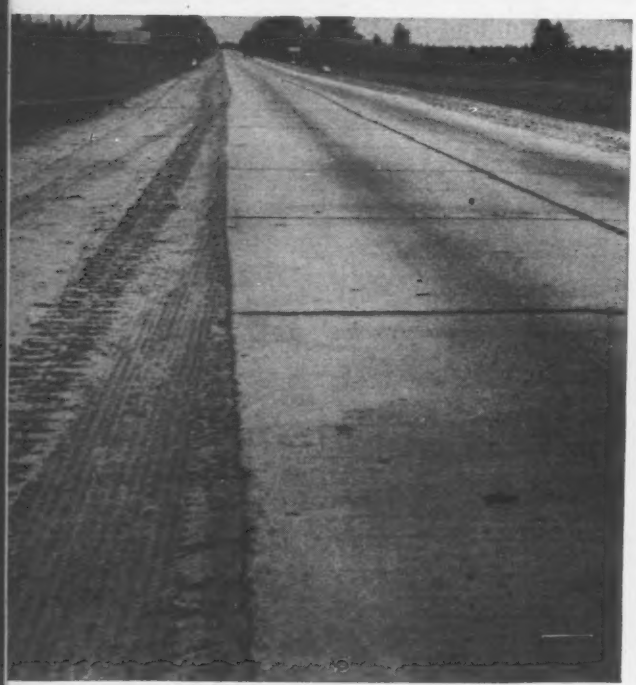
"These women are hand-packing subgrade stone in a Kalinin street. Overhead are the latest model sodium-vapor street lights. Though Russia is completely rebuilding heavily war-damaged cities with its best material and equipment, scenes like this of primitive labor methods are common. Machine rollers are parked nearby, but wait for the paving."

(*Turn the page*)

What Russia's construction looks like today . . .

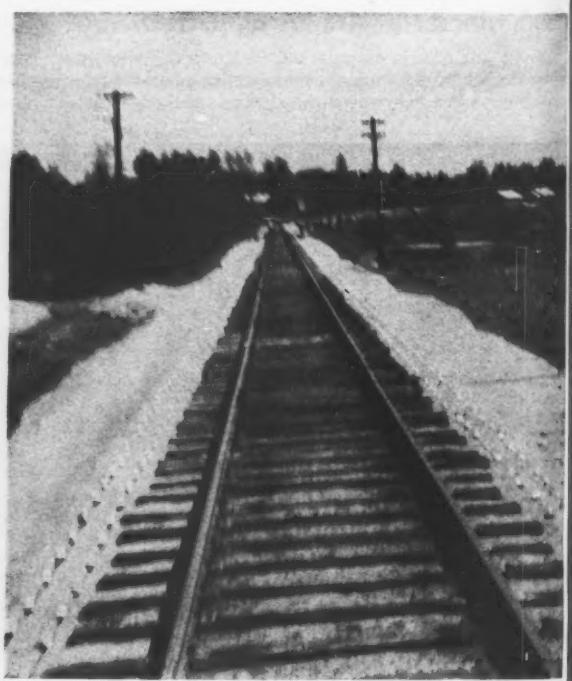
"Paving is not well done and is limited to main centers and major highways"

"This crazed pavement in Leningrad's Square of Mars is rare. There just isn't much pavement; cobbles are commonplace. Often highway pavement is crudely jointed and poorly aligned. The general impression I got was that Russian highway construction is where U.S. construction was in the 1920's—and this despite planning and experimenting.



"Even major routes are lightly travelled"

"This main route, near Novgorad, is comparable to U.S. 1. It's midday but the largest traffic count I took was only 50 vehicles per hour either way, and most were trucks."



"Why the stones?"

"Outside cities, I saw single or double lines of white-painted stones on both sides of railroad tracks. No one could tell me their purpose. Does anyone know?"

NEW-

Tow it into place

...Weir Contracting Co. tows their Heltzel Unitized, Mobilized Batching plant from previous job site on its own transportation wheels...

Heltzel's new 100 and 150-ton, pushbutton batching plants are now *unitized* and *mobilized* for easier moving—for faster setup—for greater savings of time and money.

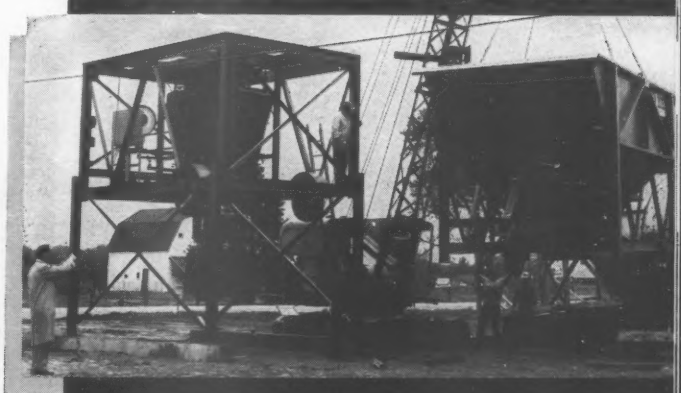
The new plant consists of two self-contained mobile sections; hopper section and batcher section (including scales) with new fold-up supporting columns. Both sections have built-in wheel assemblies and towing tongues—ready to roll.

Weir Contracting Company of Detroit, Michigan reports: "... Our first job was in Greenbrier Meadows Subdivision, Livonia, Michigan. After the plant arrived on the site it was ready for operation in a very few hours. We found that the speed of batching will give two complete batches in thirteen seconds. On subsequent work, the plant was dismantled and ready for transportation in two hours and towed by small, single axle dump trucks to the new location. We have found that the built-in transportation wheels save us over $100.00 a move because of not having to rent trailers."

For complete data and specifications contact your nearby Heltzel representative—or write us direct.

Set it up fast

... batcher section is raised into position, hinged columns are lowered and bolted in place ...



... bin section is positioned and bolted on top of batcher section.

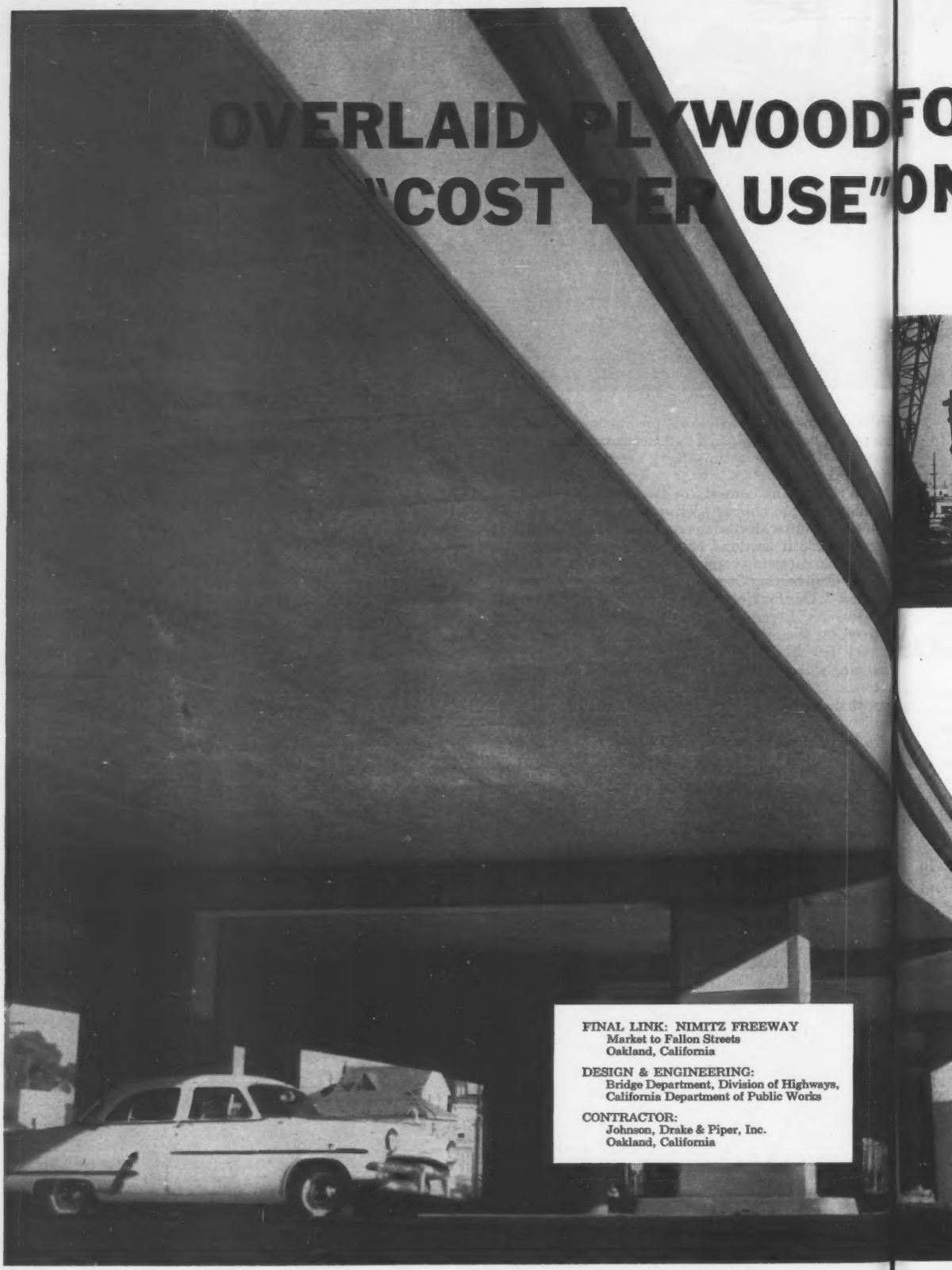
Start batching

In just a few hours this full size, high capacity, pushbutton paving plant is ready to operate!

Heltzel Steel Form and Iron Company, Warren, Ohio

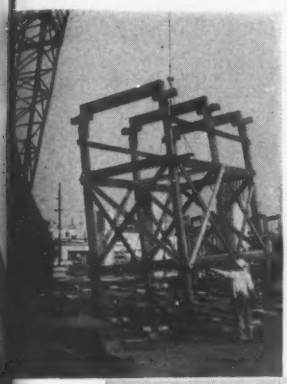
Flex-Plane Corporation, Warren, Ohio

THE HELTZEL STEEL FORM AND IRON COMPANY
WARREN, OHIO

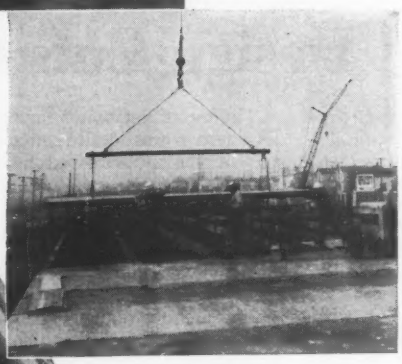

OVERLAID PLYWOOD FO
"COST PER USE" ON
FINAL LINK: NIMITZ FREEWAY
Market to Fallon Streets
Oakland, California
DESIGN & ENGINEERING:
Bridge Department, Division of Highways,
California Department of Public Works
CONTRACTOR:
Johnson, Drake & Piper, Inc.
Oakland, California

ODFORMS GIVE LOWEST E"ON ELEVATED HIGHWAY

High density overlaid plywood concrete form panels give over 50 re-uses, cost less than .007¢ per sq. ft. of form per pour.



In carefully planned sequence of operations, prefabricated shoring towers were positioned, screw-jacked to required height. Deck form sections were then crane lifted into position.



"THE EXTRA RE-USES we got from overlaid plywood more than offset its greater initial cost," says George Krenkel, project manager for Johnson, Drake & Piper, Inc., contractors for this 1.55-mile long 8-lane elevated highway.

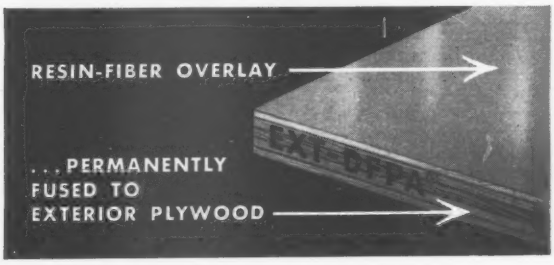
"Even after giving upwards of 50 re-uses, a large percentage of the panels were salvaged for additional use on other jobs," Mr. Krenkel reports. "Besides being more economical in terms of cost per use, overlaid plywood creates much smoother concrete and is easier to strip and clean."

On the job over 50,000 sq. ft. of ⅝" overlaid plywood was used for deck slabs, columns and guard rails. Prebuilt 8′ x 20′ and 8′ x 22′ deck forms were supported by ingenious prefabricated shoring towers which were leap-frogged as pouring progressed. Screw jacks were used to raise towers to required heights. Stripping was accomplished simply by lowering jacks until the forms came free.

DOUGLAS FIR PLYWOOD ASSOCIATION
TACOMA 2, WASHINGTON
—a non-profit industry organization devoted to research, promotion and quality control

HIGH DENSITY OVERLAID FIR PLYWOOD is a premium concrete form panel intended for jobs that require ultra-smooth concrete surfaces and/or many re-uses (up to 200 re-uses may be obtained with properly designed and constructed forms). Base panel is EXT-DFPA® Exterior plywood.

Standard concrete form grades are: *Interior PlyForm®* with water-resistant glue for multiple (up to 10-12) re-uses; *Exterior PlyForm®* (waterproof glue) for up to 25 or more re-uses.



For this hospital of lightweight concrete . . .

Ultimate-Load Design Cuts Cost of

By using lightweight concrete for structural members and designing by the ultimate-load method, designers reduced member sizes and lowered costs for a reinforced concrete nursing and food service unit of the Northwest Community Hospital at Arlington Heights, Ill.

The four-story rectangular building is three bays wide and five bays long. Flat shallow beams span between column supports throughout its entire length.

• Column spacing is 24 ft c-c longitudinally and 28 ft c-c transversely. The floor construction between beams is a concrete joist system.

Lightweight concrete was specified to weigh not more than 110 lb per cu ft. Minimum ultimate compressive strength was required to be 3,000 psi at 28 days. Reinforcing steel was specified to be intermediate grade with a yield point of 40,000 psi.

By **Kenneth C. Naslund** *and* **Eugene Yamamoto.** *Mr. Naslund is a partner in The Engineers Collaborative and Mr. Yamamoto is senior structural designer for Skidmore, Owings & Merrill—both Chicago firms.*

• **Fire rating factor**—Reduction of dead loads was only a secondary consideration in specifying lightweight concrete. The primary consideration was to reduce the cost of providing the required fire rating specified by the hospital code.

The higher insulating factor of lightweight concrete plus an unusually thick 4-in. top slab on the concrete joists satisfied the fire rating requirements without resorting to a high-cost fire-rated ceiling. Moreover, the frequent penetration of such a ceiling by ducts would have made fireproofing difficult and costly.

A slag aggregate was used for the concrete. Cement content was eight bags per cu yd, while the slump varied from 4 to 6 in. Average compressive strengths at seven and 28 days were 2,380 psi and 3,430 psi, respectively. The range of the 28-day compressive strength was 3,150 to 4,210 psi. The dry weight of the concrete was 105 lb per cu ft.

• **Why ultimate load design?**—Design of the structure by the ultimate-load method permitted minimum beam depths. It also reduced the need for much of the compression steel reinforcement that would have been required if the elastic theory had been used.

The use of flat beams to support the joist system was ideally suited for analysis by the ultimate-load method. In addition, the ease in altering load capacity of a beam by varying only tension reinforcement facilitated final design. In fact, it was possible to maintain many preliminary beam depths in spite of the usual changes in loading during architectural design.

By keeping beam depth shallow, the architect was able to fix a low floor-to-floor height while still providing ceiling space required by other trades. Ultimate-load method also benefited the design by permitting use of an optimum 18-in.-square column, even where high bending moments occurred. Much larger column sizes would have been required if the elastic theory had been used to analyze columns with both bending and axial loads.

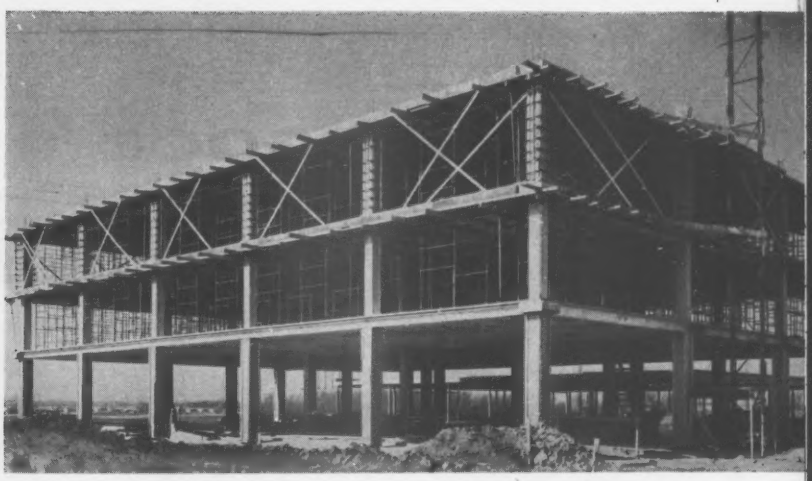
Although design by the ultimate-load method is handicapped by lack of design charts, such as those extant for the elastic theory, the designers found that, after a few basic tables were developed, the new method was easy and fast. It also permitted the designers to exercise more judgment in considering loading factors, since a more accurate concept of the capacity of a member is possible.

Cost of Building

• **Construction problems** – Because of the many types of lightweight concrete now on the market, very careful supervision of the design and batching was necessary. Preliminary design reports of the lightweight concrete were carefully reviewed before approval; and, inspectors were present at the batching plant and the job site to adjust water content as necessary when variation of moisture in the aggregate affected water requirements.

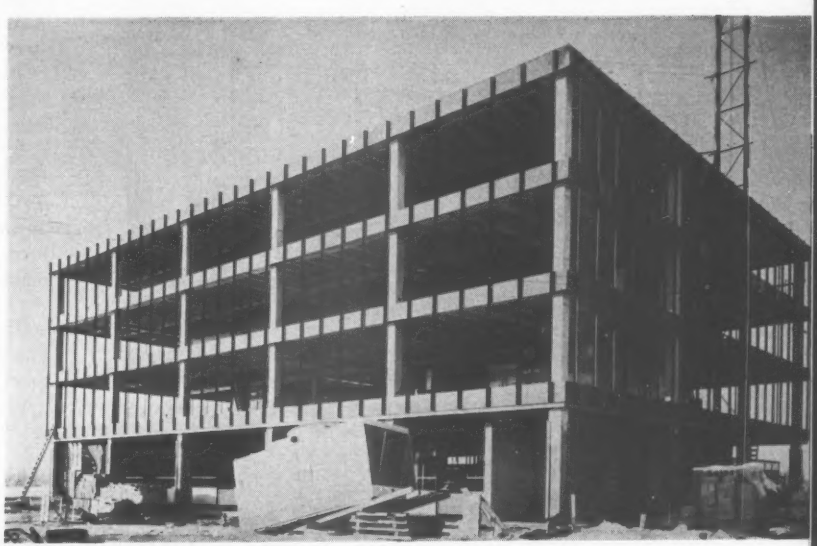
The workability of lightweight concrete was unintentionally advantageous. The heavy concentration of reinforcing bars would have made ordinary concrete more difficult and time-consuming to place. However, placing was extremely fast and easy. The lighter weight also made handling easier for the laborers. These advantages in placing concrete permitted the finishers to work rapidly and without interruptions.

The B. W. Handler Construction Co., Chicago, was the general contractor. Skidmore, Owings & Merrill personnel associated with the project included James W. Hammond, partner-in-charge; William E. Dunlap, project manager; Wilbur A. Mullin, job captain; and Thomas Houha, architectural designer.



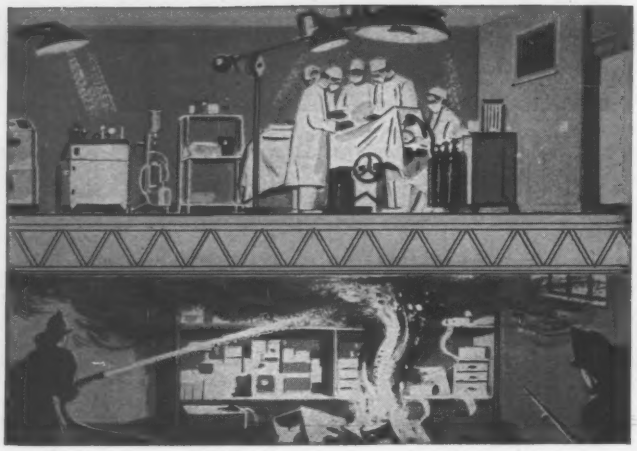
Lightweight concrete floors require less-than-usual shoring.

Girders are shallow—same depth as floor joists.

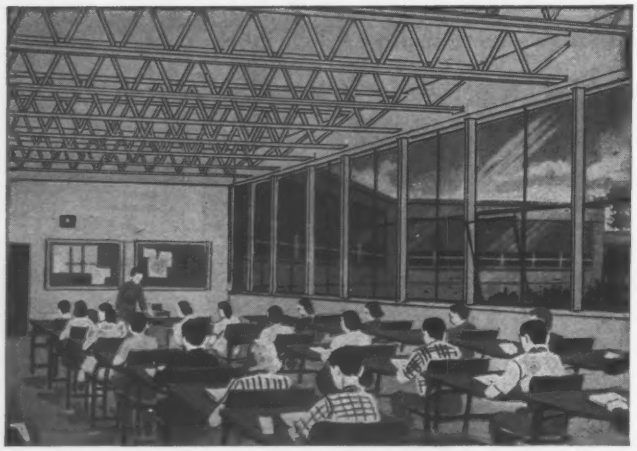


Mullions for curtain walls extend from second floor to roof.

SIX GOOD REASONS FOR DESIGNING WITH STEEL JOISTS



FIRE-RESISTANCE



NON-SHRINKING, NON-WARPING

FIRE-RESISTANCE—Steel joists in combination with floor slab and plaster ceiling form a barrier with up to four hours' fire-resistance depending on slab thickness and the type of plaster. And greater fire-safety is of particular importance in multi-story buildings such as hospitals, apartments and schools.

NON-SHRINKING, NON-WARPING—Building maintenance is greatly simplified when you design with joists. They provide non-shrinking, non-warping construction which eliminates sagging floors and cracked ceilings.

COLUMN-FREE SPACE — Steel joists are ideal for long spans such as auditoriums, gymnasiums, garages, stores. And in any building they give a maximum of column-free space.

VIBRATION-RESISTANCE—Good, firm floor construction is assured with steel joists. Adequate stiffness in floors is of special importance in multi-story buildings.

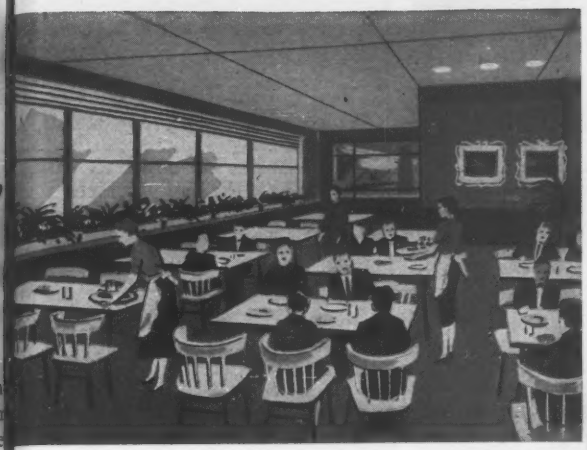
SIMPLIFIED CONDUIT INSTALLATION—The open webs in Bethlehem Steel Joists allow for the passage of pipe, wires—even heating lines—in any direction. The open webs also greatly simplify installation of conduit and wiring for recessed lighting fixtures.

FAST, ECONOMICAL CONSTRUCTION—Joists arrive at the job fully fabricated and tagged, ready for immediate placing. Two men can easily place small joists, and a simple derrick lifts the larger sizes.

These are some of the important advantages you get when you use Bethlehem Open-Web Steel Joists. And Bethlehem Joists are fully approved by the Steel Joist institute.

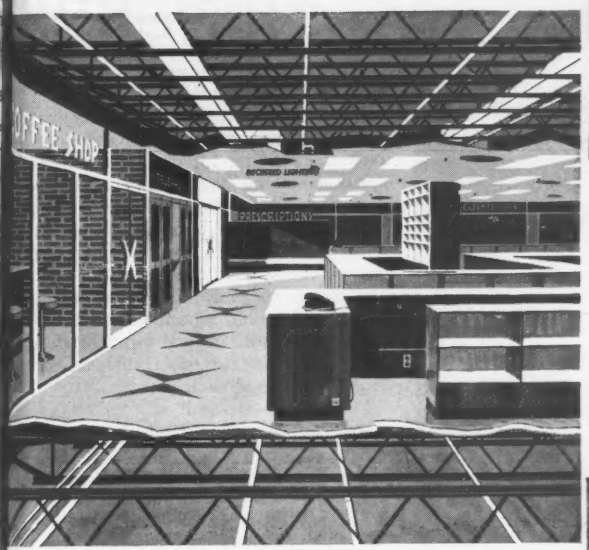
BETHLEHEM STEEL COMPANY, BETHLEHEM, PA. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM STEEL

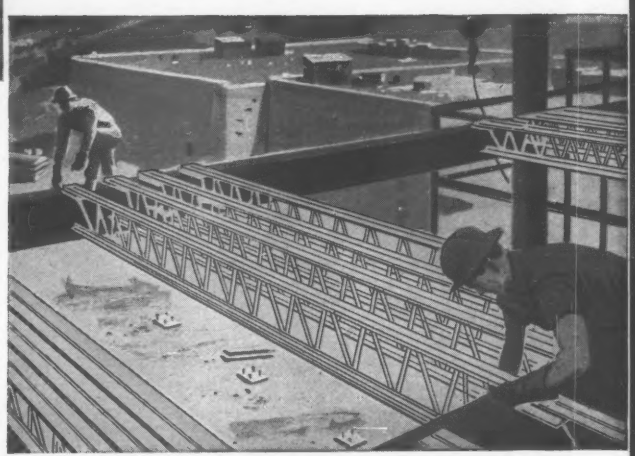


COLUMN-FREE SPACE

VIBRATION RESISTANCE

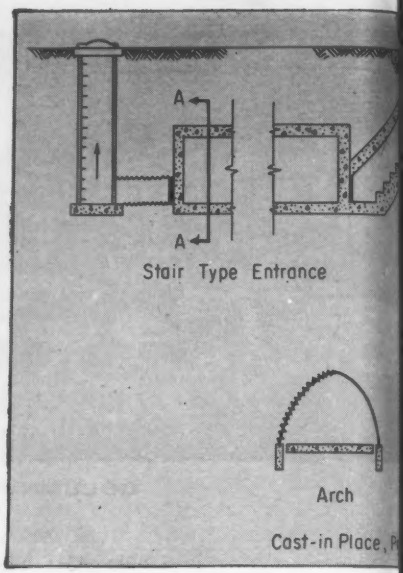


SIMPLIFIED CONDUIT INSTALLATION



FAST, ECONOMICAL CONSTRUCTION

BETHLEHEM STEEL



1 Getting in and getting out pose

Designing S

Engineers in the near future may find themselves increasingly concerned with designing better shelters against nuclear blasts and radioactive fallout. New York State, for example, is considering making bomb shelters mandatory for all homes and commercial buildings, and the U. S. Civil Defense Mobilization Administration is stepping up its educational efforts in this area (ENR July 16, p. 27). Meanwhile, the armed forces have been carrying out experiments with several types of shelters. Following are two reports on different aspects of shelter design.

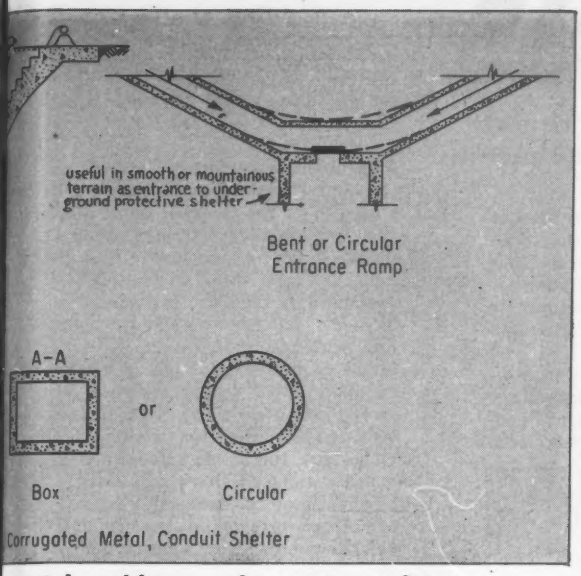
1 Building Shelter Entrances

Adequate entrances and exits are important features to be considered in the design of protective shelters.

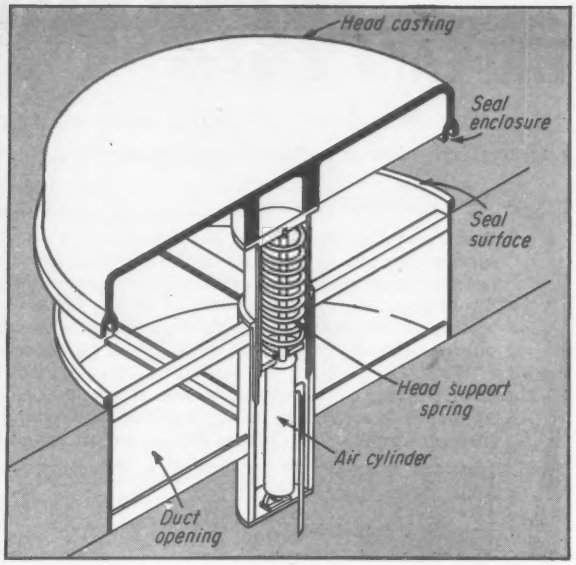
Good shelter protection may be likened to good fire-protection design. The problem facing a fire prevention engineer is that of reducing the time of evacuation from a building. The protective construction engineer is faced with the direct opposite—he must make entrance to a structure easy and accessible in a minimum of time.

Nevertheless, the two have much in common. Entrances and doorways for both should be designed for use under severe conditions of panic—remembering that usually-rational people are not

By Lt. Cmdr. Charles C. Corione, U. S. Navy Bureau of Yards and Docks.



special problems under panic conditions



2 Valve closures keep out blast pressure

ing Shelters Against Panic, Pressure

necessarily rational in extreme emergency.

And certain specifications for fire regulations may be applied to protective shelters as well.

Few exits—For small shelters of about 100-person capacity, only one entrance and one emergency exit is suggested. This provides economy and safety against building up overpressure inside. The entrance should be simple to enter and reach. It should be so placed that fire, smoke or debris do not block it off.

Exits should be arranged for larger shelters (greater than 100-person capacity) so that the distance of maximum travel from any point within the shelter does not exceed 100 ft.

Doors and entrances should be oriented, if possible, away from the blast; i.e., away from ground zero.

Experience and studies of fires made by disaster engineers over the years, have produced these figures for movement of occupants through entrances and doorways: 45 persons per minute per unit of exit width for stairs; 60 per minute for horizontal exits (no stairs).

Exit doors should swing with the direction of travel; entrance doors should swing opposite to the direction of travel and ordinarily should be kept open if possible.

Passageways and stairways should be adequately lighted; stairs should be properly pitched and have landings and handrails.

The maximum slope recommended for ramps is one vertical to eight horizontal to provide maximum safe emergency travel. However, 1 to 10 is more readily accepted. Ramps are preferable to stairs whenever possible.

2 Preventing Blast Pressure

Pressure build-up inside a shelter that may be undamaged externally can wreak havoc with occupants and shelter equipment. The best designed personnel shelter is useless against nuclear explosions unless it prevents blast pressure from entering through ventilation and other openings.

As a step toward solving this problem, the Bureau of Yards and Docks has developed what promises to be one of the most efficient blast closures yet designed.

It is a valve-type closure operated by compressed air and actuated by visible light or blast emitted by a nuclear explosion. It can close in less than ½ second after detonation. It is designed to protect openings on vents, air-conditioning intakes and exhausts, machinery air intakes, and exhausts and other openings in structures where blast entrance must be prevented.

Design qualities—The closure (as seen above) features a torispherical (dome-like) head of cast aluminum reinforced with radial and circumferential ribs. It weighs 265 lb.

The head is supported by a chromium-plated slide tube acting within a bronze sleeve bearing. The bearing is in turn fitted inside a mounting tube, which is framed into the sealing seat.

The entire assembly can be installed in a wall or ceiling by cutting a 48-in.-dia hole, inserting the mounting tube and bolting down the flanged sealing ring. The design can also be easily scaled down to accommodate smaller openings.

Here's how it works.

- Visible light from a nuclear explosion generates an electrical signal in any one of several photocells mounted on an antenna (and located to provide 360-deg coverage in azimuth). The cells are located in an exclosure to shield them from direct sunlight. Filter elements minimize the possibility of receiving false signals from lightning, automobile headlights or reflected sunlight.
- The electrical signal fires the squib in the explosive valve, which, in turn, punctures the seal in a compressed-air bottle.
- Released compressed air under about 1,000-psi pressure actuates a pneumatic cylinder connected to the closure bonnet and pulls the head tight against its O-ring gasket to provide sealing against both positive and negative phases of the blast wave.
- When the bonnet has reached its

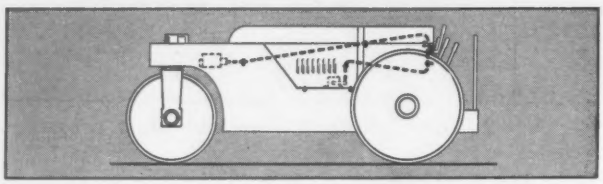
By Lt. Cmdr. W. J. Francy, *Director, Passive Defense Division, U. S. Navy Bureau of Yards and Docks.*

TRU-LAY *PUSH*-PULLS

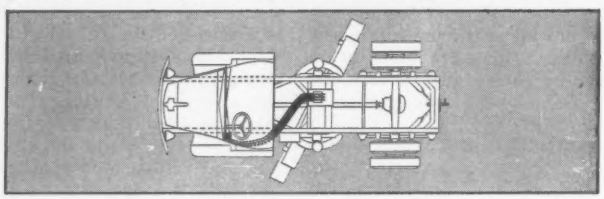
give trouble-free, lifetime service for remote control of construction and quarrying equipment

Operators of Construction or Quarrying Equipment can be certain of maintenance-free service from TRU-LAY PUSH-PULL CONTROLS because of their precision manufacture—rugged construction—lubrication for life of the inner, working member at the factory—complete sealing of the entire unit (a vitally important factor in tough, outdoor operations) against dust, dirt or moisture.

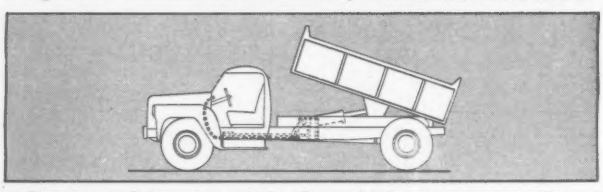
***We have never heard of a* TRU-LAY FLEXIBLE PUSH-PULL CONTROL *wearing out in normal service.* Examples of heavy-duty applications are shown below. Users of such equipment benefit from simplified equipment design and improved operation.**



• Shown here is a tandem roller where two different PUSH-PULL cables are used to facilitate operation. One cable, 156″ long, is capable of a 2″ stroke to operate the hydraulic steering valve at the front of roller. The second, shorter cable operates tail shaft governor which keeps roller speed constant, upgrade or down.



• More room in the cab of this snow plow was one of the advantages of installing PUSH-PULL cables. This permitted the hydraulic valve to be located at a more convenient point in the chassis. "There are so many things you can do with these flexible cables compared to the old fixed installations," the manufacturer told us.



• Raising and lowering of the dump body on a famous line of hydraulic dump trucks is via TRU-LAY PUSH-PULL cables. With PUSH-PULLS this merely entails the pulling of a button on the dash. The installation did away with cut-up floor boards and levers in the truck cab. TRU-LAY PUSH-PULLS brought easier installation, more convenience and less maintenance.

For complete information
we'll be glad to send you a copy of **Bulletin DH-461...**

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. . . Building shelters

closed position, four spring-loaded latches engage striker pins on the bonnet and lock it closed; later it is manually released.

Adaptability—Both the pneumatic and electrical circuits can operate one or a number of devices, and so are adaptable to a single shelter or a group of shelters. The system can utilize the signal from one group of photocells to operate more than one explosive valve. Thus a signal from one group of cells can be used to "button-up" closures in all shelters in a large installation simultaneously.

The system can also work for central station pushbutton control of all enclosures; this is desirable when advance warning of attack is received.

The closure is designed to:

- Adapt to square, rectangular or circular openings up to a maximum area of 9 sq ft.
- Operate in either horizontal or vertical position.
- Permit entrance of a pressure of no more than ½ psi per 1,000 cu ft of shelter space before and after closure. (Overpressures in excess of ½ psi may rupture particular filters.)
- Remain closed during the negative phase of the blast wave.
- Operate electrically or manually.
- Be adaptable to framing into concrete or steel, including corrugated steel.
- Resist overpressures up to 30 psi without permanent distortion, and up to 50 psi without major rupture.
- Require minimum maintenance.

• **Cost**—Estimated production costs for a single closure device including all associated pneumatic and electrical circuitry is about $3,000, based on 100 units.

The need for a more dependable, lightweight and economical blast closure device became apparent to BuDocks in 1956, following evaluation of existing designs. Closure devices then available were either too heavy, too expensive, too complicated or offered too much resistance to airflow.

BuDocks negotiated a contract with American Machine and Foundry Co. to design and fabricate a more efficient closure.

In the process of arriving at the final design, AMF investigated and discarded four closure schemes: rectangular sliding; rectangular vertical lift; wedge type; and valve type with hemispherical head.

The final design was developed under the BuDocks' continuing engineering and investigation program and under the immediate supervision of the Passive Defense Division.

Ultimate strength design used in Philadelphia's newest housing project!

Modern application of this tested principle provides short cuts in planning . . . brings substantial savings in time and materials.

The 18-story Park Towne Place apartments are the largest urban renewal development in the U.S.—and Philadelphia's tallest reinforced concrete structures!

Here was an ideal opportunity for engineers to demonstrate the value of the *ultimate strength method* for designing concrete.

The engineers used *ultimate strength design* because they believed this procedure to be more consistent with actual structural behavior and more realistic in relation to encountered loads, resulting in uniform safety factors—neither over- nor under-designed.

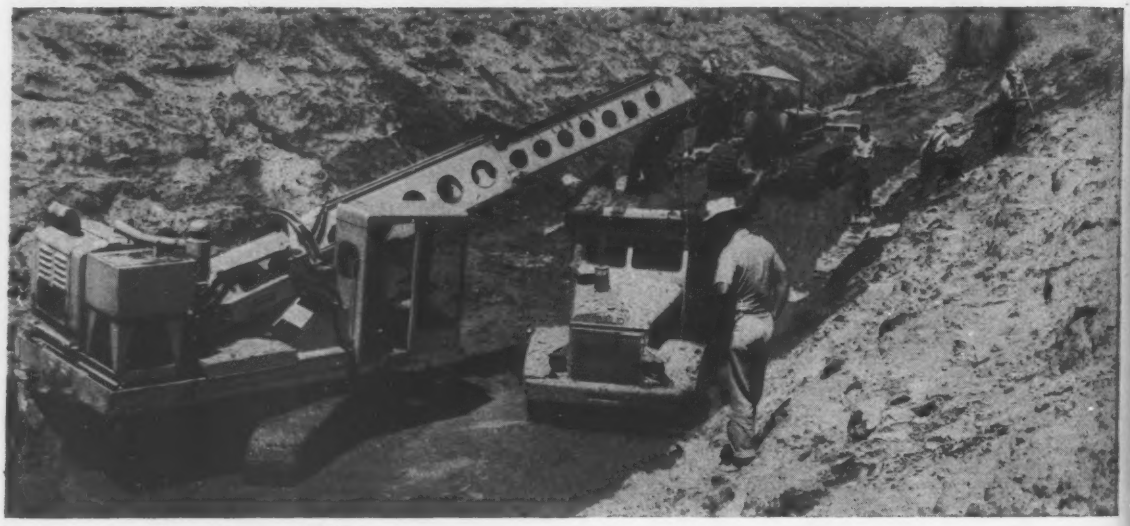
The design of the columns on this project demonstrated dramatically the economy of materials achieved by using *ultimate strength design*. Engineers everywhere are finding *ultimate strength design* is quick and easy when they use procedures, data and design aids now available.

Parke Towne Place Apartments. Architects: John Hans Graham & Associates, Washington, D.C.; Milton Schwartz, AIA, Philadelphia. Structural Engineers: Dorfman & Bloom, Philadelphia. General Contractors: Parkway Triangle Construction Co., Philadelphia.

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete

FOR STRUCTURES... MODERN **concrete**



Too thin to shovel, too thick to pump . . .

Mud Is Thickened, Then Dipped

Most of Carlyle Dam's 20-ft-wide core trench went fast enough with shovel and wagon. But the bottom two feet above bedrock was a soupy earth-and-water mixture too thin to shovel and too thick to pump.

Eugene Luhr & Co., Columbia, Ill., contractor for part of the Kaskaskia River (Illinois) project, put a telescoping ⅝-cu-yd excavator to work thickening the mud. The excavator pulled drier earth from the cut sides into the trench bottom. This stiffened the mixture enough so it could be moved.

The contractor removed the material two ways. At first he dipped it up with the telescoping excavator and loaded it into a six-cu-yd end-dump truck. Later he bailed it out with a 2½-cu-yd clamshell, handled by a crawler crane with 70-ft boom at the top of the cut.

In the first method, it was necessary to pull the loaded wagon backwards up a steep ramp at the end of the trench with a crawler tractor. Had the wagon backed down into the trench for loading, then headed up the ramp it would have lost most of its payload by spillage out the rear end of the body.

• **Two wellpoint systems**—The upper portion of the trench was excavated by a 3½-cu-yd crawler dragline and a fleet of five 13-cu-yd bottom-dump wagons. Throughout the excavation operations, the entire area was dewatered with a wellpoint system along each bank.

The two systems contained over 400 wellpoints. Each system had nearly 1,400 ft of 6-in. to 10-in. header pipe located 13 ft above bedrock.

Each system was operated by a diesel-driven pump with 10-in. suction and 8-in. discharge. A gasoline-driven pump of the same size was also provided as a standby. The contractor couldn't take a chance of being flooded out. The wellpoint systems and pumps were adequate and lowered the water table about 10 ft.

As the excavation of the core trench neared rock, a line of sandbags about 3 ft high was placed along each side to help keep the groundwater out and to prevent the cut slopes from sloughing into the bottom of the trench.

The 47,000 cu yd of pay quantity for excavating the core trench is based on a 15-ft bottom width, 1 on 1½ cut slopes up to the wellpoint header pipe, then ½ on 1 slopes to ground level. The contractor, however, excavated a 20-ft bottom width of trench to give better working area for his equipment.

• **Earth fill dam**—Carlyle Dam will be a rolled earth fill 6,570 ft long and 67 ft above stream bed. A reinforced concrete spillway, located in the embankment about ¼ the length from the right abutment, will contain four 38x39-ft tainter gates. The outlet works will consist of two 5 ft 8 in. x 10 ft sluices. A 15.5-ft-dia penstock will be provided in the spillway structure for future hydropower. A 24-ft roadway will be carried across the dam.

Total storage requirement is 983,000 acre-ft, covering an area of about 57,500 acres. Of this amount 33,000 acre-ft are reserved for water supply for 25 towns in the surrounding area and 200,000 acre-ft for aid to navigation, conservation and recreation. About 50,000 acre-ft of inactive storage will be for sediment retention. The remaining 700,000 acre-ft of storage will be for flood control.

• **Remedial measures**—Remedial measures in connection with the $40-million project will include protection from impounded water for Keyesport, Ill. It also includes raising about 6.5 miles of railroad embankment and five railroad bridges; raising or relocating 15 miles of secondary roads; raising or relocating 20 miles of electric power and telephone lines; relocating 46 miles of pipe lines; modifying two oil fields and two water supply systems; and removing or partially removing seven cemeteries.

Luhr's $498,000 contract is about 40% complete. It includes nearly 500,000 cu yd of Stage I embankment and 1,400 ft of core trench.

The project is under supervision of the St. Louis District, Corps of Engineers, headed by Col. Charles B. Schweizer. Harold Shaver is project engineer. Joe Thompson is assistant project engineer and chief concrete and soil technician.

The Fabulous Ohio River Development

see story on following three pages . . . . .

LOUISVILLE, KY.

Reconstruction of Lock No. 41 located 607 miles below Pittsburgh This is a complicated job involving four cofferdams: Two main cofferdams, upstream and downstream and two guardwall cofferdams upstream and downstream. A total of 99 cells was constructed using 10,850 tons of USS MP 101 and MP 112 Piling in various lengths from 24 feet to 60 feet. General contractor—Hardaway Contracting Co., Columbus, Ga., under supervision of Louisville District, U. S. Corps of Engineers.

MARKLAND, IND.

Lock and Dam No. 39. Located 531.5 miles below Pittsburgh. Will replace five outmoded navigational facilities. One main lock 1,200 feet long by 110 feet wide and one auxiliary lock 600 feet x 110 feet. Dam gates are 42 feet high by 100 feet long. Lock cofferdam is 3,250 feet long, 50 feet high and contains 8,000 tons of USS Steel Sheet Piling. Lock construction recently completed by Dravo Corporation, Pittsburgh, Pa., under supervision of Louisville District, U. S. Corps of Engineers.

Between Greenup and Louisville . . . Four huge locks and da

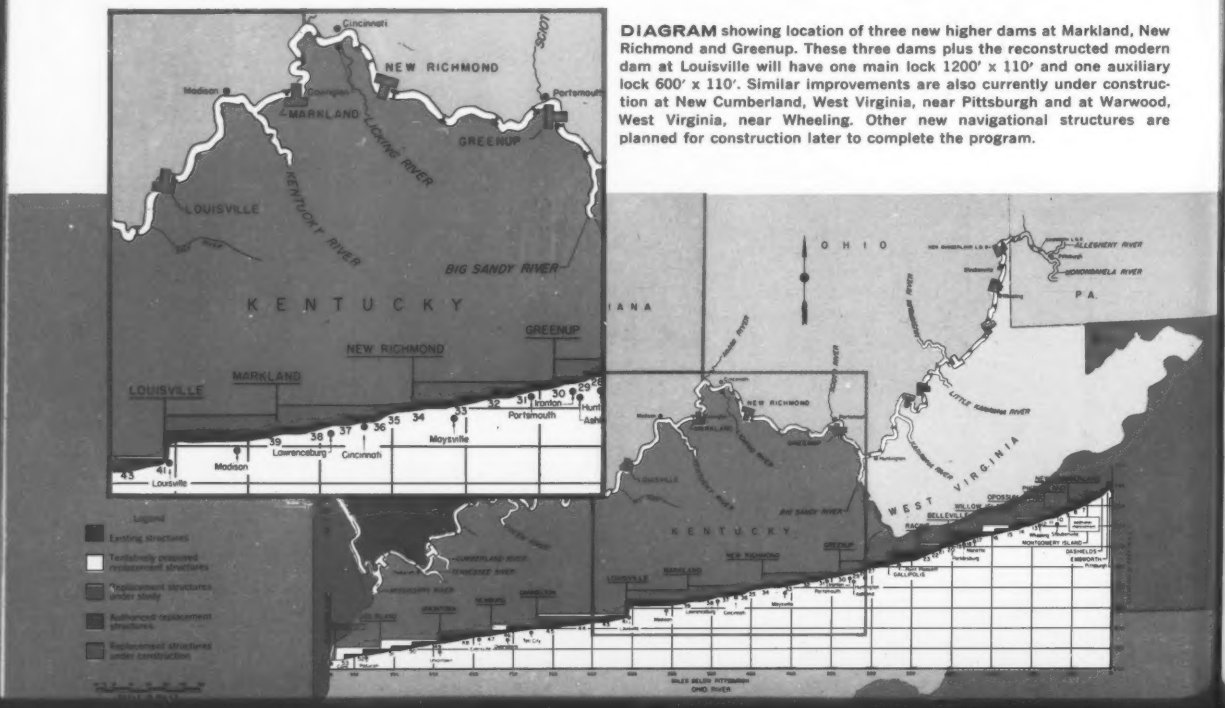


DIAGRAM showing location of three new higher dams at Markland, New Richmond and Greenup. These three dams plus the reconstructed modern dam at Louisville will have one main lock 1200′ x 110′ and one auxiliary lock 600′ x 110′. Similar improvements are also currently under construction at New Cumberland, West Virginia, near Pittsburgh and at Warwood, West Virginia, near Wheeling. Other new navigational structures are planned for construction later to complete the program.

NEW RICHMOND, OHIO

Lock and Dam No. 34. Located 436.2 miles below Pittsburgh. Will replace four older structures. Two locks same size as those at Markland but the dam gates will be only 37 feet high. The lock cofferdam contains 13,465 tons of steel sheet piling and has a total of 56 cells. Maximum length of piling 84 feet. Cofferdam construction by Peter Kiewit, Omaha, Neb.; lock construction by Groves Ventures Company, Minneapolis, Minnesota, under supervision of Huntington, W. Va. District, U. S. Corps of Engineers.

GREENUP, KY.

Lock and Dam No. 30. Located 341 miles below Pittsburgh. Replaces four older structures. Two locks of the same size as Markland. Dam gates will be 37 feet high. The lock structure has been completed by Atkinson-United Companies. A total of 10,194 tons of steel sheet piling was used. Much of this was USS Steel. Lock chamber cofferdam by Dravo Corporation of Pittsburgh, dam and cofferdam by Massman Construction Co., Kansas City, Mo., under supervision of Huntington, W. Va. District, U. S. Corps of Engineers.

and dams will replace 14 outmoded structures

USS Steel Sheet Piling is used in the cofferdams

The growing industrial development in the Ohio River Valley has boosted river traffic to more than ten times what it was 30 years ago. In 1957 it was 17 billion ton-miles. Barge tows are now longer and many have to be broken up every time they go through the old 600-foot locks.

To speed traffic, the billion dollar Ohio River navigation replacement and improvement program is now in full swing under the direction of the Ohio River Division Office of the Corps of Engineers at Cincinnati, Ohio.

The entire program includes replacement of the present 46 navigational structures with 19 modern facilities. It is estimated that when the program is completed, about 1975, two full days' locking time will be cut off the average running time from Pittsburgh, Pa., where the Ohio River begins, to Cairo, Illinois, where it enters the Mississippi.

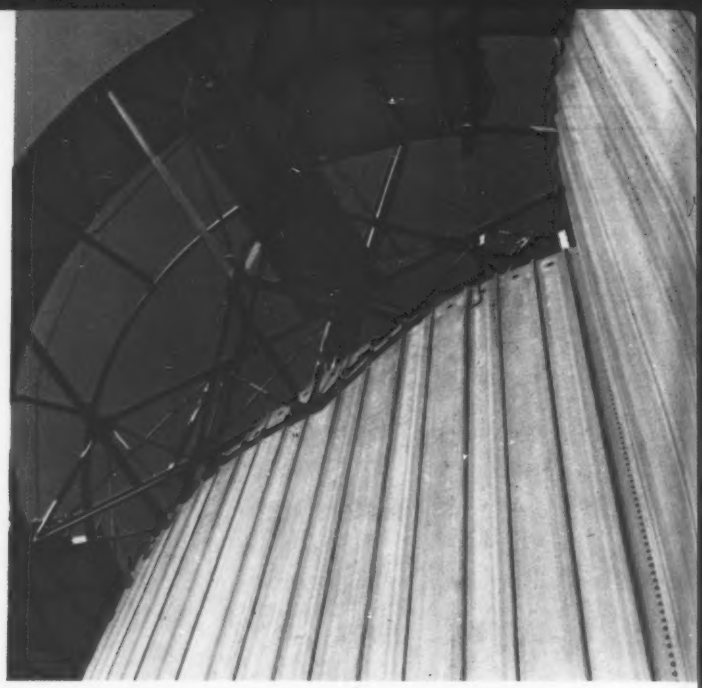
In this stretch of river, between Huntington, W. Va., and Louisville, Ky., huge new locks 1200 feet long and 110 feet wide are going in at Greenup, Ky., New Richmond, Ohio, Markland, Ind., and Louisville, Ky. Three new non-navigable dams, built higher to maintain the nine-foot minimum navigable depth, will take the place of 13 old structures in this 300-mile stretch.

One of the first major jobs is to build steel sheet piling cofferdams to dry up the work areas. Thousands of tons of U. S. Steel Sheet Piling are being used in these temporary cofferdams. A large quantity of USS Sheet Piling is also incorporated into the permanent lock structures. U. S. Steel's production capacity insures ready availability of all popular piling sections and makes possible quicker deliveries to each of the job sites. This capacity is advantageously located to provide shipment by various means—in this case by economical water transportation. In addition to steel sheet piling, hundreds of tons of USS Steel H-Piles are being used to support major portions of the structures including the guard and guide walls and in some cases the dam structures.

United States Steel Corporation—Pittsburgh
Columbia-Geneva Steel—San Francisco
Tennessee Coal & Iron—Fairfield, Alabama
United States Steel Export Company

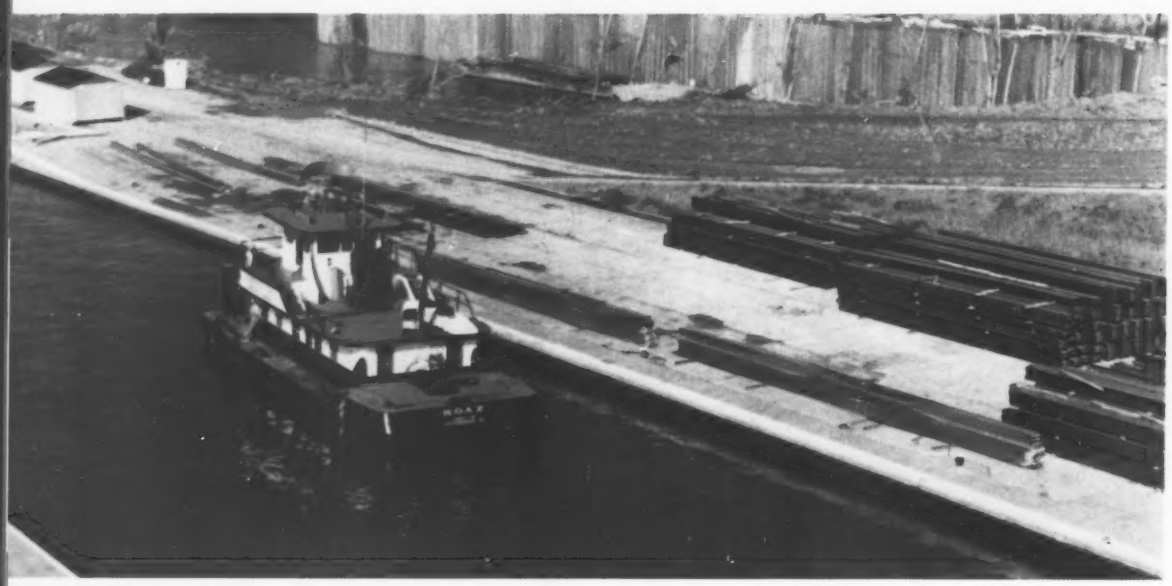
United States Steel

Additional information on next page . . .



Building a cell at Louisville using a template to assure correct diameter.

USS Steel Sheet Piling stacked and ready for use after delivery by barge to Louisville.



Quick deliveries on USS Steel Piling

U.S. Steel's large production facilities and close attention to customer's needs have made possible "on-time" deliveries even in remote sections of the country. When you want any type of piling in a hurry—Steel Sheet Piling or Steel H-Piles—call the United States Steel office near you. For technical information, write United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

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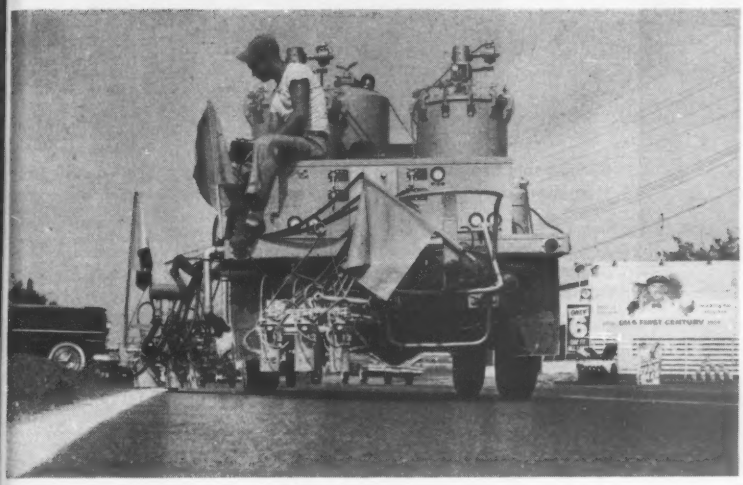

Electronics Lays Down the Line

The Delaware State Highway Department is using an electronically controlled highway striping machine that can apply solid, broken or edge lines at speeds of 12 to 15 miles per hour.

Built into a light truck chassis, the unit carries its own supplies of white and yellow marking paints and reflective glass beads, all under pressure. It can be operated by one man.

A heater maintains the paint at a constant temperature. This assures a smooth application and extends the striping season through the entire year. A three-gun spray and bead-dispenser mount is attached to the back of the vehicle. Another three-gun mount can be attached to the left or the right sides. WALD INDUSTRIES, INC., HUNTINGDON, PA.

Precast Concrete Docks Float

Precast reinforced concrete docks and walkways for small boats that offer stability in rough water and low maintenance costs are now available.

Known as Unifloats, the docks are available in 3-, 4-, 6- and 8-ft widths. They are modular and can be joined together to make various combinations.

The Unifloat is a one-piece hollow float and deck that displaces 91 lb per sq ft of deck surface. It has a dead weight of 23 lb per sq ft. FIBRECRETE CORP., 1617 W. GAYLORD ST., LONG BEACH 13, CALIF.

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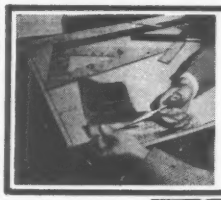
If you're duplicating drawing details, you're squandering precious hours of costly drafting time. STANPAT, the unique tri-acetate that is pre-printed with your standard and repetitive blueprint items, cuts time involved from 3 hours to 15 seconds! Figured at current pay rates, this means a $12 job at less than one cent . . . the STANPAT way. Easily transferred to your tracings by an adhesive back or front, STANPAT relieves your engineer of time-consuming and tedious details, freeing him to concentrate on more creative work.

here's how simple the STANPAT method is!



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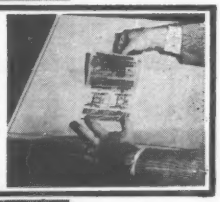
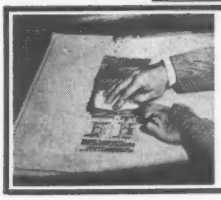


PLACE the STANPAT into position on the tracing.



PRESS into position . . . will not wrinkle or come off.

STANPAT is available in two types of adhesive backs:

- Rubber base for standard drafting and tracing papers
- Resin base to prevent leaching for papers that contain oils

But whatever the application may be, there's a STANPAT product for your specific needs. STANPAT has a guaranteed shelf life of one year from date appearing on tab end. For further information and technical assistance, complete the coupon below and mail.

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DEPT. 131

Name_____
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Special split sleeve couplings—also fabricated from 4-D Wrought Iron Pipe—were used in pre-assembly of the electrical conduit on the scow.

The 4-D Wrought Iron conduits—with degree bends at each end—were banded together prior to placement by William H. Moore Building Corporation and Lopier Construction Corporation, New York, N.Y.

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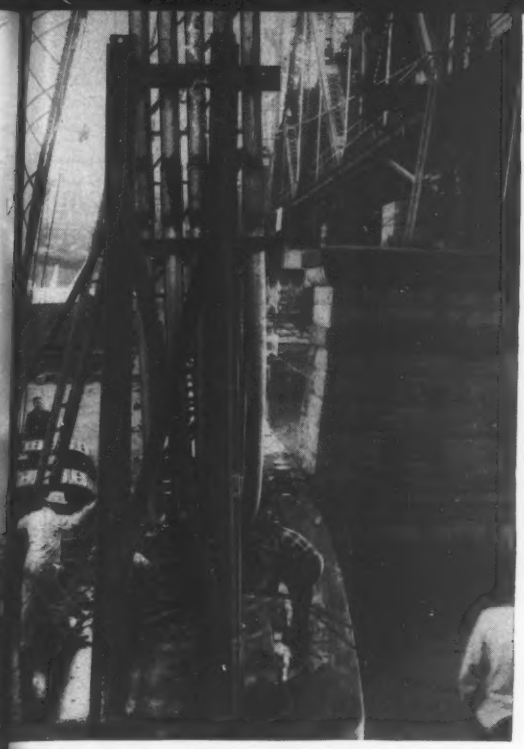


Two ends of conduit were butted together inside the split sleeve coupling. Two clamps secured the longitudinal edges of couplings to conduit ends prior to tack welding. Then, clamps were removed and the welding job completed.

Consulting Engineers: Tippetts-Abbett-McCarthy-Stratton, under the supervision of the Department of Public Works, Bureau of Bridge Design; Frederick H. Zurmuhlen, P.E., R.A., Commissioner.

4-D Wrought Iron conduit protects electric cables under New York City's new Broadway Bridge

HERE'S WHY: INACCESSIBILITY

Sheathing electric power cables in adequate protective conduit was vital in this underwater installation. Inaccessibility to maintenance and repair placed extra emphasis on the need for durability.

Key considerations here were uncompromising corrosion-resistance and uninterrupted service, according to Jack Joyce, electrical engineer for New York City's Department of Public Works. So, engineers specified 4-D Wrought Iron for fabrication into 6- and 8-inch diameter conduit to carry all electric cables between the span's lift towers. The specification was a sound one.

4-D's highly refined base metal impregnated with non-rusting iron silicate fibers is a proven buffer against corrosive attack encountered in conduit services. Long random lengths reduce the number of joints required. Impact resistance and easy fabrication are also part of the quality package that is 4-D Wrought Iron conduit.

Complete size ranges of 4-D Wrought Iron conduit, black and galvanized, are stocked by established distributors throughout the country. U. L. labeled wrought iron conduit is also available: sherardized and vinyl coated.

HERE'S HOW: SUBMERGED TRENCH INSTALLATION

This 80-ton conduit unit was placed on a sand base in a 10-foot-deep trench blasted into the Harlem River's rock bottom 33 feet below water surface. Then, workmen backfilled the trench with sand.

Next came assembly of the 316-foot-long conduit unit on the deck of a 327-foot-long scow. Finally, they lowered it with four closely coordinated cranes. A row of five 6-inch diameter conduit was positioned on top of five 8-inch diameter conduit. This unit is in to stay. 4-D Wrought Iron lasts.

BYERS 4-D WROUGHT IRON

TUBULAR AND FLAT ROLLED PRODUCTS

A. M. BYERS COMPANY, CLARK BUILDING, PITTSBURGH 22 PA.

Corrosion costs you more than Wrought Iron

187-TON GIRDER

SET BY THIS MANITOWOC

Backbone of a new triple-decked intersection for Chicago's Northwest Expressway is a 187 ton steel girder . . . the heaviest single piece of its type ever erected in the city. Measuring 126′ x 13′, this is the heaviest steel girder ever shipped in one piece by the American Bridge Division of the U. S. Steel Corp. Mounted on reinforced concrete piers, it will support 60 smaller girders. These, in turn, will support ten tracks of the North Western Railroad carried over the intersection at this point.

To handle the giant girder, American Bridge used the largest capacity crawler crane made—a 125 ton Manitowoc Model 4000. The great capacity of the big Manitowoc was a key factor on the project which entailed lifts such as 95 tons at a 25½ ft. radius. The Model 4000 was equipped with 80′ of the Manitowoc "T" section style boom for the job.

Adjacent to the job site the Manitowoc crane placed the girder on two 100 ton railroad "push" cars which carried it on a special length of track to a point alongside the concrete support columns. After lifting one end of the girder in place, the big crane inched through a passageway under a temporary construction track to set the other end of the girder in place. In every respect a tough job in tight quarters.

For a detailed report on the 125 ton capacity Manitowoc Model 4000 see your Manitowoc distributor soon. Only the Model 4000 does the "impossible" by handling lifting jobs that formerly required two or more rigs. No other crawler crane can match this record!

SHOVELS 1¼-Yd. — 5½-Yd.
CRANES 25 Ton — 125 Ton

Manitowoc

MANITOWOC ENGINEERING CORP.
(A subsidiary of The Manitowoc Company, Inc.)
MANITOWOC, WISCONSIN

CRANES	SHOVELS	DRAGLINES	TRENCH HOES
25 TON - 125 TON	1¼-YD. - 6-YD.	1¼-YD. - 6-YD.	1¼-YD. - 3-YD.

Men and Jobs

William H. Rabe Leaves Ohio Highway Department

William H. Rabe has retired after 45 years of service in the Ohio Department of Highways.

He had been first assistant chief engineer of bridges for 38 years and is noted for his research in determining the capacity of driven foundation piles. The originator of numerous highway bridge practices, Mr. Rabe has been connected with planning more than 5,000 bridges.

A 1914 graduate of Ohio State University, he also attended the U. S. Naval Academy from 1910-1912.

Carlos A. Weber Retires from Michigan Road Post

Carlos A. Weber, a long-standing member of the Michigan State Highway Department, retires after 40 years. He joined the department as rodman and rose to chief engineer.

A graduate of Michigan State University, Mr. Weber is a member of the planning and design policies committee of the American Association of State Highway Officials.

Upon retiring he plans to go into private business.

Careers

Retirements

Howard H. Roberts, with the Army Corps of Engineers for 41 years, retired as special assistant to the Missouri River Division engineer. He will take on duties as vice president of the Nance Engineering Inc., Omaha.

John V. Spielman retired as supervising engineer for the safety of dams section of Southern California's Water Resources Department. During his 14 years as an inspector, he was involved in the construction of 40 new dams.

Lawson D. Matter, chief of the Pennsylvania Health Department's water supply section, retired after 40 years service. He will continue as consultant on water supply and sewerage.

A. M. Barton, chief engineer and general manager of the California State Reclamation Board, retired after 36 years' service.

Forrest Davies retired from the Army Corps of Engineers, Jacksonville district, after 19 years' service.

George R. Wood, superintendent of the city water and sewer department, Carolina Beach, N. C., resigned. He will take up a similar position in Canton, N. C.

Associations

Philip E. Geissal, former chief planning engineer in Kansas City, Mo., takes over as directer of Louisville Central Area, Inc., a newly formed private organization to promote the rehabilitation of downtown Louisville.

Charles E. Cutts, head of the civil engineering department at Michigan State University, has been named to the advisory panel on engineering sciences for the National Science Foundation.

Walter Crafts, associate director of technology for the Union Carbide Metals Co., Niagara Falls, N. Y., has been named president of the American Society for Metals.

Arnold Arch has been appointed executive secretary of the National Air Pollution Control Association at Pittsburgh. He has been director of air pollution control at Niagara Falls since 1953.

William J. Donovan, executive secretary of the Newport, R. I., Housing Authority, is New England's regional president for the National Association of Housing and Redevelopment Officials.

F. D. Widner has been elected president of the Engineering Society of Toledo. He is on the research staff of Surface Combustion Corp.

Julian R. Bruce, an international representative for the United Steel Workers Union, has been elected chairman of the Buffalo Sewer Authority.

M. J. Weber of the Port of Seattle is president of the Northwest Rivers and Harbors Congress.

New officers with the Wire Reinforcement Institute are **Warren D. Dreher,** president, and **Bruce D. Bennett,** vice president. Mr. Dreher is wire products sales manager for Colorado Fuel & Iron Corp., Western Division. Mr. Bennett is manager of construction material sales for the American Steel & Wire Division of United States Steel.

Col. W. Dixon Smith, retired U. S. Army engineer, has been appointed staff hydraulic engineer for the Asphalt Institute, College Park, Md.

William Gillett has been reappointed to a second term as chairman of the Building Advisory Board. He is vice-president of Fenestra, Inc. Serving a second term as vice chairman is Richard H. Tatlow III, president of Abbot, Merkt & Co.

Thomas J. Ryan is executive secretary of the Mechanical Contractors Association of America, Inc. He has been special assistant to the general counsel of the National Labor Relations Board.

For positive traction (wet or dry) and lasting beauty, this sidewalk at the Clift Hotel, San Francisco, is surfaced with ALUNDUM Terrazzo.

indoors or out . . . wet or dry
walking surfaces are NON-SLIP...
even on steep inclines, with
ALUNDUM
AGGREGATE or ABRASIVE

NORTON ALUNDUM Aggregate or Abrasive is widely and successfully used to provide permanent walking safety in and around all types of structures both industrial and public.

For new installations or for making existing surfaces non-slip, there's a NORTON Aggregate or Abrasive that's just right for the job.

ALUNDUM TERRAZZO AGGREGATE
For terrazzo floors and stairways where a combination of beauty and long-lasting walking safety is desired.

ALUNDUM (c.f.) AGGREGATE
For floors, stairs and ramps that provide the very maximum of durability plus a permanently non-slip surface, wet or dry.

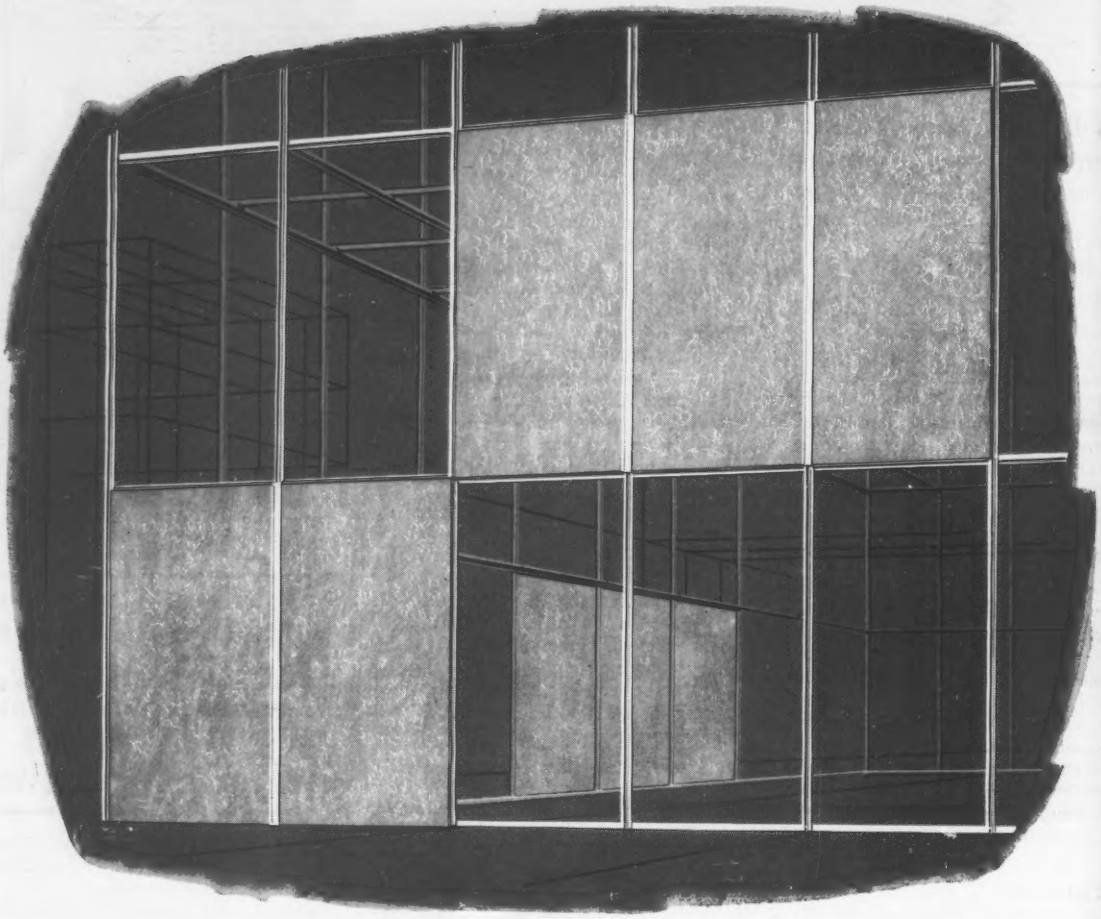
NORTON NON-SLIP ABRASIVES†
Existing floors, stairs and ramps of wood, cement or metal can be made non-slip quickly and inexpensively with NORTON Non-slip Abrasives* in resin.

† Formerly known as NORTON Sidewalk Abrasives

*ALUNDUM (brownish-black) aluminum oxide and CRYSTOLON (sparkling black) silicon carbide

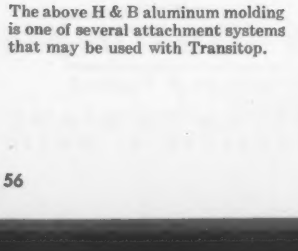
Cataloged in SWEET'S.

NORTON
NON-SLIP FLOORS
NORTON COMPANY
WORCESTER 6, MASS.



JOHNS-MANVILLE ASBESTOS TRANSITOP®

Outside finish—inside finish—with insulation in between—all go up in one operation



The above H & B aluminum molding is one of several attachment systems that may be used with Transitop.

Here are modern panel curtain walls that provide unusual durability and at the same time can save erection time and money.

Transitop panels are big—4′ x 8′ to 12′ and 11/16″ to 2″ thick. They cover large areas fast. They're rigid and strong, yet light in weight. Dead load is reduced—and framing can be lighter in construction. Once up, Transitop continues to prove its economies—it is virtually free of the need of any maintenance.

The reason is, Transitop consists of two surfaces of rock-hard, compressed asbestos and cement with an insulating core sandwiched between. It stands up to wind, sun and rain—gives no worries of expansion and contraction.

To see the many ways Transitop can help you in your construction—to see how easily it is erected, to learn of its economies—send for the illustrated brochure on J-M Asbestos Transitop—write Johns-Manville, Box 158, New York 16, N.Y. In Canada, Port Credit, Ontario.

JOHNS-MANVILLE

JOHNS-MANVILLE JM PRODUCTS

Low excavation and borrow bid takes . . .

Georgia Road and Bridge Job

On a bid of 34 cents for 1,079,200 cu yd of roadway excavation and borrow, Coffee Construction Co., Eastman, Ga. was successful bidder for this 1.57 miles of grading and paving, with nine bridges, on Interstate Route 75, Tipton to Macon Rd. in Crisp County, Ga. The award, at $1,494,701, by the State Highway Department of Georgia, was 7.3% under the engineer's estimate, but only 3% below the second bid. J. N. Richardson is division engineer of the department in Gainesville.

Roadway construction ($1,062,099) accounts for 71% of the total contract. The remaining $432,602 (29%) is for these nine bridges:

Bridge	Length ft	Roadway width ft
Double bridge	162	38.6 ea. bridge
Double bridge	151	28 ea. bridge
Railroad grade separation structure, double bridge	146	38.5 and 42.5
double bridge	151	28 ea. bridge
single bridge	186	28

Contractors were given their choice of concrete or corrugated metal pipe for the subdrains, and concrete, corrugated metal or standard strength clay pipe for the underdrain. The successful bidder priced the concrete pipe for both.

1C	Coffee Constr. Co., Eastman, Ga.	$1,494,701
2	Wright Constr. Co., Columbus, Ga.	1,539,415
3	J. D. Manly Constr. Co., Leesburg, Fla.	1,735,797
EE	J. N. Richardson, chief engr. State Highway Dept., Gainesville, Ga.	1,612,059

Bids: 6-12-59 Items	Unit	Quantity	Unit Prices 1C	2
Roadway				
Clear & grub	ac	10	$10.00	$1.00
rdway, 83.729 acres	ls	job	8,000	10,000
Exc & bor, uncl, incl matl	cy	1,079,200	0.34	0.38
Overhaul on borrow, special	uy	3,401,000	0.001	0.0001
Subgrade compaction, special	mi	1,570	1,000	1,000
Exc, culv & minor structs	cy	1,200	1.50	1.50
Culv fndn bkfl, select matl, type 1	cy	665	2.00	2.00
type 2	cy	280	3.00	6.00
Conc, cl A, culverts, aprons & flumes	cy	136	42.00	45.00
cl B, headwalls	cy	75	45.00	50.00
Steel, bar reinforcement	lb	18,900	0.115	0.12
Subdrain, conc pipe cl II, 15"	lf	180	2.50	3.20
18"	lf	150	3.50	4.85
24"	lf	60	5.00	7.00
extension, 15"	lf	10	2.50	3.70
18"	lf	20	3.50	4.85
Crossdrain, conc pipe cl II, 1-10' fill, 15", & stub	lf	1,210	2.50	3.20
18"	lf	60	3.50	4.85
24"	lf	820	5.25	6.30
30"	lf	310	6.50	8.50
36"	lf	300	9.00	11.50
cl III, 10-15' fill, 24"	lf	250	6.00	6.50
cl V, 20-25' fill, 24"	lf	350	7.50	8.00
Underdrain, conc, 6"	lf	2,000	1.00	1.80
Culvert pipe, subdrain or crossdrain, remov	lf	250	0.50	1.00
relay	lf	160	0.50	1.50
Right of way markers, conc	ea	60	5.00	7.00
Seed backslopes, other areas	sy	106,000	0.0275	0.025
Sprig slopes & shoulders	sy	172,500	0.035	0.025
Riprap for shldrs & subdrains, loose sod	sy	20,800	0.30	0.40
Spillways, block sod	sy	100	1.00	1.00
Ditch checks, sod	sy	400	0.60	0.75
Water for grassing	Mgal	300	3.00	3.00
Fertilizer, 1st application	t	37	50.00	50.00
2nd application	lb	8,880	0.23	0.25
Agricultural lime	t	124	9.00	10.00
Mulch, bit treated	sy	1,000	0.06	0.10
Culverts, cl A conc, remov	cy	20	$20.00	$20.00
Headwalls, cl B conc, remov	cy	4	10.00	10.00
Catch basin, std 1033 B, type I, mod H-4' or less	ea	5	250.00	225.00
type II, mod H-4' or less	ea	3	250.00	225.00
Conc spillway, std 9017-D	ea	12	200.00	150.00
Drop inlet, std 9031-F, type A or B, H-4' or less	ea	1	200.00	160.00
modified	ea	7	200.00	160.00
additional depth	lf	1	30.00	30.00
CMP slope drain, 10", 16 ga	lf	770	2.50	2.50
15", 16 ga	lf	340	3.00	3.30
Junction box, std 9031-F, type C or D	ea	4	200.00	160.00
Reinf conc approach slabs, incl trans curb	sy	190	11.50	12.00
	sy	1,720	11.50	12.50
Grd rail, deep beam, incl post	lf	9,400	2.80	2.40
Cutback asphalt prime	gal	8,200	0.16	0.18
Cmt. conc pavement, plain, 10"	sy	46,000	4.73	4.86
8"	sy	31,000	4.20	4.29
	sy	630	4.00	4.00
Concrete median, 4"	lf	4,100	0.50	0.70
doweled integral mtble curb, 6x4"				
comb curb & gutter, std 9031-E, tp A-1, 6x30"	lf	1,480	2.20	2.10
tp C, 6x30"	lf	370	2.50	2.10
Fence, chain link, 6'	lf	9,880	3.00	2.70
end, corner, angle & intermediate brace posts	ea	40	30.00	32.00
Stripe painting	sy	70	2.00	3.00
Mac base crse, soil bound, premixed	t	3,600	4.00	2.95
Constr (cement stab)	t	12,770	4.20	2.95
Portland cement	bbl	1,940	5.00	5.25
Asphalt concrete, A or B	t	830	8.00	8.00
E	t	2,110	7.50	8.00
Bit premix level crse for subbase	cy	1,610	3.00	2.00
Asph, cutback, for level crse, RC-3	gal	25,670	0.13	0.15
tack ct, RC-3, for leveling	gal	11,550	0.13	0.15
Cold mix method, soil for gran subbase	cy	41,670	1.10	1.20
bit matl RC-3, incl manipulation	gal	121,510	0.14	0.14
Asph matl, AC-8	gal	42,800	0.12	0.15
Bridges				
Concrete, class A	cy	768	52.00	55.00
Steel bar reinforcement	lb	105,685	0.12	0.115
Superstructure concrete, bridge, #1, left	ls	job	6,934	8,700
right	ls	job	6,934	8,700
#2, left	ls	job	8,083	11,000
right	ls	job	8,771	11,000
#3, left	ls	job	14,500	12,700
right	ls	job	14,500	12,700
#4, left	ls	job	7,186	9,000
right	ls	job	7,186	9,000
#5	ls	job	7,594	9,500
steel, reinf, brl #1, left	ls	job	2,962	2,850
right	ls	job	2,962	2,850
#2, left	ls	job	3,333	3,500
right	ls	job	3,623	3,500
#3, left	ls	job	7,617	7,300
right	ls	job	7,617	7,300
#4, left	ls	job	3,253	3,100
right	ls	job	3,253	3,100
#5	ls	job	3,191	3,050
Struct steel, brl #1, left	ls	job	13,500	14,000
right	ls	job	13,500	14,000
#2, left	ls	job	18,469	20,000
right	ls	job	19,614	20,000
#3, left	ls	job	3,000	1,000
right	ls	job	3,000	1,000
#4, left	ls	job	14,000	14,000
right	ls	job	14,000	14,000
#5	ls	job	21,000	16,500
Conc handrail, spec design	lf	632	4.00	5.00
std. 3616	lf	1,094	5.00	6.00
Aluminum handrail, std. 3614	lf	988	10.00	5.70
Prest conc piling, 14" sq	lf	4,810	8.50	8.00
16" sq	lf	2,970	9.50	9.00
18" sq	lf	1,320	12.00	11.50
20" sq	lf	770	14.00	17.00
test piles, 14" sq	ea	8	400.00	575.00
16" sq	ea	4	600.00	825.00
18" sq	ea	2	800.00	960.00
20" sq	ea	2	1,000	1,300
Loading tests	ea	9	10.00	50.00
Excavation, bridge, #1	cy	1,041	3.00	4.00
Conc slope paving, 4"	sy	2,679	5.00	5.00
Clear & grub bridge sites, 4.415 acres	ls	job	1,000	220.75

uy Unit yard

Awarded: 6-22-59. Completion schedule: 340 working days

When time means money

. . . use Pittsburgh heavy-duty HIGH STRENGTH BOLTS

Good service and dependable shipment at all times. Readily available from stock, our bolts offer you these advantages . . . permanent clamping force—smooth fastening action—quick, easy, economic installation. Two-man bolting teams can use these bolts faster, more efficiently, with a greater degree of safety and less noise than any other method of construction. And, there's no fire hazard.

Remember . . . when time means money, use Pittsburgh heavy-duty high strength bolts. VMA 6727

SCREW AND BOLT CORPORATION OF AMERICA
P. O. Box 1708 Pittsburgh 30, Pa.
Formerly Pittsburgh Screw and Bolt Corporation
America's Most Complete Line of Industrial Fasteners

Whether it's a modern, attractive office building (above) or a spacious factory (left), you'll find the exact building you need in the Parkersburg Plan.

Build exactly what you want... fast!

Your Parkersburg Building is tailored to your exact requirements. Production line efficiency and thousands of hours of engineering experience give you a top-quality, fire resistant metal building with maximum economy.

Your Parkersburg Metal Building will go up fast, significantly faster than conventional structures. Parkersburg high-quality construction means years of low maintenance.

Whether you need a warehouse, terminal, factory or business office, you'll find just the building you want in the Parkersburg Plan. Your experienced Parkersburg Dealer-Erector can give you complete information, including financing arrangements. Look for his name in the yellow pages under "Buildings, Steel" or write to Parkersburg for Data Book BD-959-8.

PARKERSBURG METAL BUILDINGS

MBMA

BUILDING DIVISION • THE PARKERSBURG RIG & REEL COMPANY • PARKERSBURG, WEST VIRGINIA

Materials Prices

Monthly Market Quotations by ENR Field Reporters

LUMBER, TIMBER, PLYWOOD PER M FT.B.M., CARLOAD LOTS F.O.B.

SOUTHERN PINE AND DOUGLAS FIR

All Southern Pine is No. 2 common or better and for No. 1 N. C. Box. (Prices in Bold Face)
All Fir boards, dimensions, planks No. 2, Fir small timbers and timbers are No. 1. Lengths up to 20 ft. (Prices in italics)

	1x6 S4S	1x8 S4S	2x4 S4S	2x6 S4S	2x8 S4S	2x10 S4S	3x12 Rgh	6x12 Rgh	12x12 Rgh	LONG LEAF Y. P. Merchantable grade up to 20 ft. 2x12 Rgh	12x12 Rgh	FIR PLYWOOD ⅜" Interior plywood C-D gr.	¾" Ply-form grade*
Atlanta.....n†R	**$97.00**	**$102.00**R	**$90.00**	**$90.00**	**$100.00**	**$100.00**	**$137.00**	.....	.....	**$117.00**	**$156.00**	**$172.00**	**$306.00**
Baltimore.....o	**100.00**	**100.00**	**105.00**	**105.00**	**110.00**	**110.00**	**125.00**	.....	.....	**175.00**	**190.00**	190.00	280.00
	124.00g	*130.00g*	*130.00g*	*135.00g*	*135.00g*	*135.00g*	*152.00g*	*$180.00*	*$170.00*	.....	.....		
Birmingham....n†r	**83.00**	**85.00**	**82.00**	**84.00**	**89.00**	**95.00**	**111.00**	.....	.....	**115.00**	**168.00**	122.30	214.50
	80.00	*80.00*	*83.00*	*81.00*	*81.00*	*98.00*	*88.00*	*85.00*	*88.00*	.....	.....		
Boston.....ns	**109.00**f	**109.00**f	**115.00**f	**115.00**f	**115.00**f	**124.00**a	.....	.....	.....	.....	.....	175.00c	300.00c
	112.00	*114.00*	*125.00*	*125.00*	*125.00*	*123.00*	*144.00*	*146.00*	*167.00*	.....	.....		
Chicago.....**	**122.00**	**125.00**	**119.00**	**133.00**	**141.00**	**142.00**	**137.00**	.....	.....	**165.00**	**170.00**	153.00	256.00
	133.00	*133.00*	*146.00*	*144.00*	*144.00*	*146.00*	*153.00*	*153.00*	*153.00*	.....	.....		
Cincinnati.....n*	**102.50**	**103.75**	**96.50**	**98.00**	**104.75**	**112.75**	**121.00**	.....	.....	**138.00**	**125.00**	94.00f	180.00f
	110.75	*113.75*	*116.00*	*117.00*	*116.00*	*133.75*	*143.25*	*143.25*	*143.25*	.....	.....		
Cleveland.....o**	**102.00**	**105.00**	**102.00**	**102.00**	**104.00**	**108.00**	.....	.....	.....	.....	.....	131.00a	225.00
	.....	.....	*125.00*	*122.00*	*127.00*	*132.00*	*150.00*	*150.00*	*150.00*	.....	.....		
Dallas.....‡R	**76.00**k	**85.00**k	**80.00**k	**80.00**k	**78.00**k	**78.00**k	**125.00**	.....	.....	**133.00**	**160.00**	112.50ac	200.00ac
Denver.....n*	*Not in stock*		*124.50*	*130.50*	*130.50*	*131.80*	*148.00*	*160.00*	*180.00*	.....	.....	154.00	231.50
Detroit.....‡	**138.00**	**140.50**	**138.00**	**138.00**	**143.50**	**143.50**	.....	.....	.....	**151.50**	.....	180.00gc	270.00gcR
	148.25	*148.25*	*153.25*	*151.50*	*160.00*	*165.50*	*204.00*	*221.00*	*221.00*	.....	.....		
Kansas City....tn	**125.00**	**125.00**	**135.00**	**137.50**	**140.00**	**150.00**	.....	.....	.....	.....	.....	160.00	260.00
	135.00	*135.00*	*135.00*	*137.50*	*140.00*	*145.00*	*175.00*	*225.00*	*225.00*	.....	.....		
Los Angeles....znu	*106.00*	*106.00*	*106.00*	*106.00*	*106.00*	*106.00*	*136.00*	*141.00*	*141.00*	.....	.....	120.00	240.00
Minneapolis....o	*145.00m*	*145.00m*	*145.00*	*145.00*	*145.00*	*145.00*	*185.00*	*185.00*	*185.00*	.....	.....	200.00	320.00
Montreal.....*bp	**84.00**a	**90.00**a	**84.00**a	**84.00**a	**99.00**a	**125.00**a	.....	.....	.....	**120.00**	**120.00**	119.25	225.95
	160.00	*160.00*	*160.00*	*160.00*	*160.00*	*160.00*	*170.00*	*170.00*	*170.00*	.....	.....		
New Orleans...†n	**89.00**	**89.00**	**96.00**	**95.00**	**95.00**	**98.00**	**126.00**	.....	.....	**160.00**	**155.00**	122.41	215.00
	128.00	*128.00*	*117.00*	*138.00*	*138.00*	*138.00*	*140.00*	*140.50*	*160.50*	.....	.....		
New York.....t	**117.00**	**118.00**	**127.00**	**127.00**	**127.00**	**133.00**	**245.00**	.....	.....	**245.00**	**255.00**	123.20a	215.60a
	.....	.....	*131.00*	*132.00*	*132.00*	*135.00*	*174.00*	*174.00*	*174.00*	.....	.....		
Philadelphia....nt	**105.00**	**105.00**	**110.00**	**110.00**	**110.00**	**120.00**	**135.00**	.....	.....	.....	.....	150.00kR	285.00k
	.....	.....	*135.00*	*135.00*	*135.00*	*135.00*	*145.00*	*145.00*	.....	.....	.....		
Pittsburgh.....st	**115.00**	**120.00**	**130.00**	**120.00**	**145.00**	**145.00**	**165.00**	.....	.....	**160.00**	**185.00**	225.00	295.00
	140.00	*140.00*	*140.00m*	*150.00*	*155.00*	*160.00*	*200.00*	*200.00*	*200.00*	.....	.....		
St. Louis.....lnt	**120.00**	**122.00**	**134.00**d	**134.00**d	**134.00**e	**136.00**e	.....	.....	.....	.....	.....	179.46achj	281.32ach
	.....	.....	*145.00*	*145.00e*	*145.00e*	*147.00e*	*199.00e*	*199.00e*	*199.00*	.....	.....		
San Francisco..nx	*88.00*	*88.00*	*94.00*	*94.00*	*94.00*	*94.00*	*109.00*	*127.00*	*127.00*	.....	.....	95.00k	160.00k
Seattle.....n†	*68.00*	*80.00*	*83.00*	*83.00*	*82.00*	*84.00*	*100.00*	*105.00*	*105.00*	.....	.....	115.00aeg	230.00aeg
Toronto.....*	**93.00**a	**98.00**a	**91.00**a	**86.00**a	**88.00**	**87.00**a	**96.00**a	.....	.....	**89.00**a	.....	275.00	343.00
	112.00	*112.00*	*117.00*	*120.00*	*125.00*	*123.00*	*138.00*	*135.00*	*135.00*	.....	.....		

† F.o.b. mill. * F.o.b. city, CL, out of yard. ** F.o.b. city, CL, direct mill shipment. ‡ Deliv. to contr. CL.

LUMBER: Bold Face Type, Southern Pine. Italics, Douglas Fir. *a Spruce. *b Federal tax exempt, add 6% mun. & prov. tax. *c 5M lots. *d 8, 10, & 12 ft. lengths. *e 8 to 16 ft. lengths. *f Hemlock *g No. 1 common. *j 8 ft. lengths. *k No. 3 common. *l Add 2% sales tax. *m Up to 16'; No. 3 western pine. *n Less 2% disc. 10 days *o Less 2% disc. 10th. *p Less 1% disc. 10 days. *q fir: $80.25 in truck lots, fob job or CL, f.o.b. city. *r for f.o.b. city price add $8 for pine, $35 for fir. *s add trucklots *t trucklots del. *u Retail LCL yard. Prov. tax. *v Retail LCL, del. *x add 4% sales tax. *w add 6% mun. &

* PLYWOOD (Plyform, oiled and edge sealed): Douglas fir, 4' x 8' panels, 5-ply sanded 2 sides, carload lots, delivered per 1000 sq. ft. surface. Seattle base price, Interior, moisture resistant, ⅜", $156.00; ¾", $176.00 Exterior, waterproof, ⅜", $160.00; ¾", $180.00. *a Delivered. *c Truck lots. *d A-C exterior. *e LCL. *f less 1%, 5 days. *g less 2% for cash. *h less 2% disc, 10 days. *j add 2% sales tax.

GLASS, EXPLOSIVES, CHEMICALS

	WINDOW GLASS Discounts from jobbers list, Feb. 1, 1950a Single or Double Strength A quality	B quality	EXPLOSIVES Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 500 lb. lots
Atlanta	78%	80%g	$0.2695
Baltimore	74%d	74%d	.2695
Birmingham	82%f	82%f	.2495
Boston	72+10%p	72+10%p	.2695
Chicago	72%	72%	.2495
Cincinnati	74%	74%	.2695
Cleveland	74-2-10%	74-2-10%	.2695
Dallas	76%	76%	.2770
Denver	73.5%	73.5%	.2695
Detroit	74-10-10%	74-10-10%	.2695
Kansas City	76-10-10%	76-10-10%	.2695
Los Angeles	$12.88/17.32k	$10.45/14.13k	.2695
Minneapolis	71-10%	71-10%	.2695
Montreal	40-10-5%b	40-10-5%b	23.20k
New Orleans	76%a	76%a	.2695
New York	79%l	79%l	.5030g
Philadelphia	78%	80%	.2695
Pittsburgh	72%	72%	.2695
St. Louis	72-10-10%mo	72-10-10%mo	.2695
San Francisco	60%	73%	.2695
Seattle	$8.85/11.55kiq	$6.41/8.67kjp	.2695
Toronto	$6.49/9.57k	$5.90/8.70k	

Price of 60% Ammonia Gelatin is $0.15 per lb. higher than 40% in U. S., $1.175 per 100 lbs. higher in Canada.

Glass: *a Jobbers' list price per box, 14 x 20, ss, $42.75 for A quality, $37.50 for B quality; 14 x 20, ds, $60.00 for A quality, $52.75 for B quality. *b sales tax extra. *c 77% for single strength. *d From 6/15/52 list. *e 77% for double strength. *f Single strength; double strength, 83%. *g From 8/1/58 list. *h ss/ds, 40-in. *i 20 boxes min. *j CL quantity. *k eff. 12/58. *l eff. 10/15/58. *m less 2% disc, 10 days. *n less 1% disc, 10 days. *o add 2% sales tax. *p less 1% for cash. *q less 2% for cash

Explosives: * Cartridges of 1¼" diameter or over, in standard lengths. *g deliveries in certain areas must be by truck or by truck and boat, requiring extra charge. *h F.o.b. Beloil (near Montreal), per 100 lb., lots under 2000#, wood cases, forcite, 40%. Forcite 60%, $23.80 in fiber cases: forcite 40%, $23.20; forcite 60%, $24.95.

40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)

	C/L 300,000 lb. lots	10,000 lb. lots	2,000 lb. lots	200 lb. lots
Group 1*	$0.2095	$0.2195	$0.2545	$0.2695
Group 2†	.2170	.2270	.2620	.2770

* All areas except those in Group 2 and N.J. cities of Bayone, Hoboken, Jersey City, No. Bergen, Union City and Weehawken † Florida counties of Manatee, Hardee, Highlands, Okeechobee, St. Lucieand south thereof; Idaho; Maine; Montana; New Mexico counties of Catron, Socorro, Lincoln, De Baca, Roosevelt and south thereof; Texas counties of Bailey, Lamb, Hale, Floyd, Motley, Cottle, Hardeman, Foard, Knox, Haskell, Jones, Taylor, Coleman, McCulloch, San Saba, Burnet, Williamson, Milan, Robertson, Leon, Houston, Angelina, Nacogdoches, Shelby and south thereof.

PILES, TIES

PILES

Prices per linear foot, fir and pine, rough peeled, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine under fifty feet based on freight from mid-South, over fifty feet, on freight from deep South.

Dimensions	Points	Length	By Rail Pine*§ R	By Rail Fir R
12" at butt	6-in.	30 to 39-ft.	$0.32a	....
12"—2-ft. from butt	6-in.	40 to 44-ft.	.69	....
12"—2-ft. from butt	6-in.	45 to 49-ft.	.73	....
12"—2-ft. from butt	6-in.	50 to 54-ft.	.77	....
12"—2-ft. from butt	6-in.	55 to 59-ft.	.81	....
14"—2-ft. from butt	6-in.	60 to 64-ft.	.87	....
14"—2-ft. from butt	6-in.	65 to 69-ft.	.92	....
14"—2-ft. from butt	6-in.	70 to 74-ft.	1.02	1.07
14"—2-ft. from butt	6-in.	75 to 79-ft.	1.07	1.07
14"—2-ft. from butt	5-in.	80 to 84-ft.	1.17	1.10
14"—2-ft. from butt	5-in.	85 to 89-ft.	1.27	1.15/1.20

* Pine piling over 90 feet available only in limited quantities. § ASTM Class B
* a, trucked in from N. J.

RAILWAY TIES

Prices f.o.b. per tie box carload lots:

		6" x 8" x 8' Untr.	6" x 8" x 8' Tr.	7" x 8" x 8'6" Untr.	7" x 8" x 8'6" Tr.
Birmingham*...	Hardwood, Grade 3	$1.70	$2.55	Gr. 5 $2.25	$3.33
	Grade 2	1.50	2.35	" 4 2.10	3.18
	Grade 1	1.15	2.00	" 3a 1.70	2.78
Chicago	Red Oak	....	4.00a	.....	4.50a
New York	S. L. Sap Pine	2.50	4.00	3.00	5.00
	Mixed Oak	2.50	4.00	3.00	5.00
Philadelphia	Mixed Oak	2.38	3.97	2.78	4.57
St. Louis	Mixed Oak	2.70	3.15a	3.15k	3.80ak
San Francisco	Douglas Fir	2.66ef	3.73ef	3.52ef	4.90ca

Tr.—Treated; Untr.—Untreated. *a* Creosoted. *c* Empty cell. *e* Green f.o.b. cars. *g* 7 x 9 x 8'6" * Add 75¢/tie freight charge to Birmingham. *h 7" x 9" x 9½"

CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

Bleaching powder in drums f.o.b. works, per 100 lb.	$5.02
Chlorine cylinders, liquid, per lb. f.o.b. works	.11
Calcium chloride, 77–80%, flaked, 100-lb. paper bag, f.o.b. works, ton	31.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb.	2.65
Soda ash, 58%, in paper bags, per 100 lb. dense	1.90
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works	2.05
Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works	21.20

See following ENR issues for OTHER PRICES:

- Clay Products, Lime, Plaster, Paint, Roofing: Last, Aug. 27: Next, Oct. 1.
- Wage Rates, Building Board, Lath, Insulation: Last, Sept. 3: Next, Oct. 1.
- Cement Aggregates, Ready-mixed Concrete, Asphalt: Last, Sept. 10: Next, Oct. 8.
- Iron & Steel Products, Pipe: Last, Sept. 17: Next, Oct. 15.

Construction Reports

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, MARIE MORAVSIK, ELAINE CHOMYAK, ELIZABETH WERRA, ELEANOR QUERET, Reports, J. H. WEBBER, E. R. HUBER, Statistics.

NEW ENGLAND

BUILDINGS—SLC

▲ **R. I., Portsmouth** — PLANT — Raytheon Mfg. Co., Foundry Ave., Waltham, Mass., soon lets contract 2 story, 160,000 sq. ft. mfg. plant, Lawton Valley site. $2,000,000. Charles A. Maguire & Assoc., Turks Head Bldg., Providence, engrs. CD 8/21.

MIDDLE ATLANTIC

BUILDINGS—SLC

▲ **Md., Baltimore**—SCHOOL—Catholic Diocese of Baltimore, 408 N. Charles St., Zone 1, soon lets contract masonry Catholic High School for Boys, Sinclair Lane and Erdman Ave. Over $1,000,000. E. H. Glidden Jr., 107 E. 25th St., Zone 18, archt.

HEAVY CONSTRUCTION—LB & CA

▲ **Rusciano Constr. Corp. & Del Balso Constr. Corp.,** 2 Penn Pl., Pelham Manor, N. Y., CA **$3,640,965,** approach roadway sys. for lower level expansion of George Washington Bridge between Fletcher and Lemoine Ave., Fort Lee Boro, New Jersey, Contr. GWB-190.025, NEW YORK and NEW JERSEY. Port of New York Authority, 111 Eighth Ave., New York 11, N. Y. Bids Aug. 25. CD 8/27, under LB.

BUILDINGS—LB & CA

▲ **Levitt & Sons, Inc.,** Rte. 13, Levittown, N. J., Owner Builds, Est. **$1,600,000,** JUNIOR HIGH SCHOOL, LEVITTOWN, N. J. CD 5/18.

▲ **B. J. Lucarelli & Co.,** 1100 McCarter Hy., Newark, N. J., CA **$1,200,000,** general contract CAFETERIA, SCIENCE LABORATORY and HEATING PLANT, at Paterson State College, PATERSON, N. J., State of New Jersey, State House, Trenton, N. J. CD 5/21.

▲ **Merando, Inc.,** 4098 Minnesota Ave. N. E., Wash., D. C., CA **$1,369,425** REPAIR SHOP, RECORD CENTER and WAREHOUSE, 2000 Adams Place N. E., WASH., D. C. D. C. Government Bldgs. & Grounds, 499 Pa. Ave., Wash., D. C. Bids Sept. 2. CD 9/8, under LB.

SOUTH

HEAVY CONSTRUCTION—LB & CA

▲† **Blount Bros. Constr. Co.,** 79 Commerce St., Montgomery, Ala., CA **$1,893,432,** Langley BOMARC facilities, Flight B, ENG-44-110-50-1, LANGLEY AIR FORCE BASE, VA. U. S. Eng., foot of Front St., Norfolk, Va. Bids Sept. 2. CD 9/11, under LB.

▲† **Baldwin-Lima-Hamilton Corp.,** Philadelphia National Bank Bldg., Phila., Pa., CA **$2,246,500,** three 48,300 horsepower turbines Wheeler Dam, ALABAMA. Tennessee Valley Auth., New Sprankles Bldg., Knoxville, Tenn. Bids July 30. CD 8/17, under LB.

▲† **McWilliams Dredging Co.,** 3308 Tulane Ave., New Orleans, La., LB **$2,410,824,** Old River Outflow channel dredging, Concordia Parish, Inv. 60-32, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans, La. Bids Sept. 9. CD 8/20.

MIDDLE WEST

HEAVY CONSTRUCTION—LB & CA

▲ **Suburban Constr. Co.,** 21700 Lake Shore Blvd., Cleveland, O., CA Est. **$5,000,000,** 48 boatels, clubhouse, swimming area, dock space, MENTOR, O. Mentor Marina, 21700 Lake Shore Blvd., Cleveland 23, O. Grosel & Jancen, The Arcade, Cleveland 14, O., archts.

▲ **ILLINOIS**—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldgs., Springfield, Bids opened 9/11,

Ill.—**Orr Constr. Co.,** 27 E. 19th Place, Chicago Heights, Ill., LB **$4,999,741,** (6 bidders), paving, retaining walls, 1.32 mi. Northwest Expressway, Cook Co.;

Ill.—**J. M. Corbett Co.,** 2500 S. Corbett St., Chicago, Ill., LB **$3,093,813,** (3 bidders), paving, ramps 0.4 mi. Northwest Expressway, Cook Co., CD 9/1;

Ill.—**Rock Road Constr. Co.,** 5915 Rodgers Ave., Chicago, Ill., LB **$1,317,588,** (7 bidders), paving, retaining walls, 0.54 mi. Congress St. Expressway, Cook Co.;

Ill.—**Dale Denny Constr. Co.,** Anna, Ill., LB **$563,129,** (3 bidders), surf. course 3.88 mi. FAS 919 east of Carbondale, Jackson Co. CD 8/31.

BUILDINGS—LB & CA

▲ **Frank Messer & Sons, Inc.,** Paddock Rd., Cincinnati, O., CA **$1,300,000,** 6 story, 142 room MOTEL, swimming pool, 114 Central Parkway, CINCINNATI, O. Parkway Motor Motel, Inc., c/o Sol Fredman, Stratford Motel, Dayton, O. Herman T. Shapiro, 4508 Greenlee St., Bernard, O., archt. Awarded Sept. 9.

▲ **The Austin Co.,** 16112 Euclid St., Cleveland, O., CA, CAN MAKING PLANT and WAREHOUSE, Shoreham, near ST. JOSEPH, MICH. Continental Can Co., 100 E. 42nd St., New York 17, N. Y.

MISSISSIPPI TO ROCKIES

HEAVY CONSTRUCTION—LB & CA

▲ **Harry Newton, Inc.,** P. O. Box 839, Graham, Tex. CA **$1,396,173,** est. $1,200,000, (5 bidders), water-pump station Sabine River, DALLAS, TEX. City, City Hall, Dallas, Tex. Bids Aug. 31. CD 8/12.

▲† **Purvis Constr. Co.,** P. O. Box 64, Yardley, Wash., CA **$1,694,781,** Sundance TM SITE 201, operations area, Sundance, ENG-25-066-59-133, WYOMING. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids July 23. CD 7/29, under LB.

BUILDINGS—LB & CA

▲ **Fegles Constr. Co.,** 2110 Nicollet Ave., Minneapolis, Minn., CA Over **$5,000,000,** general contract 5 million bu. GRAIN ELEVATOR, SAVAGE, MINN. Continental Grain Co., 26 Broadway, New York, N. Y., and Grain Exchange Bldg., Minneapolis, Minn.

▲ **Highland Development Co.,** Hy. 141, Jonesboro, Ark., Owner Builds, **$1,500,000,** RESIDENCES, paved streets, etc., Hy. 141 at northern edge of JONESBORO, ARK.

▲† **H. A. Lott & Johnson, Drake & Piper, Inc.,** P.O. Box 25005, Houston, Tex., LB **$7,685,000,** 12 story, 521,071 sq. ft. FEDERAL COURTHOUSE and OFFICE, Rusk, Brazos, Capitol and Smith Sts., HOUSTON, TEX. General Services Admin., 1114 Commerce St., Dallas, Tex. Bids Sept. 10. CD 8/17;
Hunter-Hayes Elevator Co., P.O. Box 7111, Dallas, Tex., LB **$638,300,** elevator for federal courthouse and office (Houston, Tex.).

FAR WEST

HEAVY CONSTRUCTION—BA

▲ **Calif., Los Angeles**—BA 10/9—Los Angeles County Flood Control Dist., 2250 Alcazar St., Proj. No. 59, Unit 1, Central Business Dist. Storm Drain, portion Line A, Line 1 and portion Line H. $2,000,000. (Correction—status). CD 8/25, under CA.

▲ **Calif., Los Angeles**—AIRPORT COMPLEX 3 and COMPLEX 4—BA 10/14—Dpt. Airports, City Hall, Complex 3 and Complex IV, Phase I, incl. 13 passenger bldgs., ticketing bldgs., theme structure, observation bldg. Los Angeles International Airport. $27,637,109. CD 6/8/56.

▲† **Calif., Travis Air Force Base**—BOMARC FACILITY—BA 10/15—U. S. Eng., 180 New Montgomery St., San Francisco, BOMARC facility, incl. 28 launcher shelters, ordnance storage bldg., traffic check house, composite bldg., assembly and maintenance, security control and fire station, pump house, pumping station, water storage, tank and utilities, ENG-04-203-60-10B. CD 9/11.

BUILDINGS—BA

▲ **Calif., Los Angeles**—ENGINEERING—BA 10/20—University California, 405 Hilgard Ave., 6 story, rein.-con. Engineering Unit 3, $6,000,000.

HEAVY CONSTRUCTION—LB & CA

▲ **Pomeroy-Bates and Rogers-Gerwick** 120 Montgomery St., San Francisco, Calif., LB **$16,641,000,** (8 bidders) 3,350 ft. Webster Street Tube under Oakland Estuary between Oakland and Alameda to provide two lane roadway parallel to present Posey Tube consisting of 12 tube sections each 200 ft. long and 37 ft. diam. connected at depth of 90 ft., CALIFORNIA. State Div. Hys., 1120 N. St., Sacramento, Calif. Bids Sept. 10. CD 7/15.

▲ **Vinnell Co., Inc., Ukropina-Poclih-Kroll,** 1145 Westminster Ave., Alhambra, Calif., LB **$2,671,430** (7 bidders) Storm drain Proj. 57, Unit 2, Hollenbech Heights Drainage Sys., LOS ANGELES, CALIF. Los Angeles County Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif. Bids Sept. 4. CD 8/7.

BUILDINGS—LB & CA

▲ **Dalecrest Co.,** Box 609, Canoga Park, Calif., Owner Builds, **$1,400,300,** 98 stucco DWELLINGS, Peterson Ave., Van Owen St., Welby Way, CANOGA PARK, CALIF. Duncan & Conroy, 13310 Moorpark Ave., Sherman Oaks, Calif., archts.

▲ **Alco Pacific Constr. Co.,** 9345 Westminster Ave., Westminster, Calif., Owner Builds, **$1,374,000,** 108 stucco DWELLINGS, Hole and Mobley Sts., LA SIERRA, CALIF.

▲ **Butler-Harbour Constr. Co.,** 9741 Lincoln Blvd., Anaheim, Calif., CA **$1,975,848,** 80 stucco DWELLINGS, La Sierra Park Tract. No. 1, LA SIERRA, CALIF. Sierra Downs, Inc., c/o contractor.

▲ **Green Hills Development, Inc.,** B01217 Perry Annex, Whittier, Calif., Owner Builds, **$1,036,000** 77 DWELLINGS, Summershade Ave., Lakefield Dr., Clear Springs Dr., NORWALK, CALIF.

▲ **C. L. Cory, Inc.,** Box 11013, San Diego, Calif. LB **$1,516,278,** (5 bidders), 1 story concrete, steel MATERNITY and MECHANICAL HOSPITAL Addn., SAN DIEGO, CALIF. San Diego Hospital Assn., Donald N. Sharp Memorial Hospital, 7901 Frost. St., San Diego, Calif. Bids Sept. 3.

▲ **B. O. Larsen,** 1340 E St., San Diego 2, Calif. CA **$1,308,900,** general constr. 1 and 2 story and two story separate bldg. men's PHYSICAL EDUCATION BLDG., San Diego State College, W. O. 4005GC-34 SAN DIEGO, CALIF. State Div. Archtecture, 1100 S. Grand Ave., Los Angeles, Calif. Bids Sept 2. Awarded Sept. 10. CD 9/10, under LB.

▲ **Hillview Homes, Inc.,** 2340 Fletcher Parkway, El Cajon, Calif. Owner Builds, **$1,500,000,** 138 frame DWELLINGS, Carlton Hills Annex No. 2, $411,400, 43 frame DWELLINGS, Castaic Ct., Hume Rd., Mast Blvd., Ryder Rd., Carlton Hills, Annex No. 2, SANTEE, CALIF.

▲ **Woodside,** 8660 Wilshire Blvd., Beverly Hills, Calif., Owner Builds, **$1,208,000,** 48 stucco DWELLINGS, Manson Ave., Ardwick and Darien Sts., WOODLAND HILLS, CALIF.

CANADA

BUILDINGS—BA

▲ **Ont., Windsor** — SCHOOL — BA 9/30 — Windsor Suburban High School Bd., high school, Liberty St., Sandwich West. $1,156,000. Plans deposit $50. Sheppard & Masson, 52 Chatham St. W., archts. CD 4/28.

▲ **Ont., Toronto**—HOME FOR AGED—BA 10/14—House of Providence (Sisters of St. Joseph) 65 Power St., (selected list of bidders) rein.-con., precast, structural steel Home for Aged, heating plant, laundry, chapel, Warden Ave. at St. Clair Ave., Scarborough, $5,000,000. Brennan & Whale, 1221 Bay St., archts. C. D. Carruthers & Wallace, Consultants Ltd., 92 Yorkville Ave., engrs. CD 3/3/58.

HEAVY CONSTRUCTION—LB & CA

▲ **BRITISH COLUMBIA**—British Columbus Govt., Parliament Bldg., Victoria,
Dawson, Wade & Co., 775 Clark St., Vancouver, B. C. and Emil Anderson Co. Ltd., Hope, B. C., CA **$1,566,-239** constr. 10.94 mi. Cassiar-Stewart Hy., Atlin Dist. Bids Aug. 14, awarded Sept. 9. CD 8/31, under LB.

▲ **Dominion Bridge Co. Ltd.,** Lachine, Que., LB **$5,-907,000,** (14 bidders), superstructure, Section 6. Champlain Bridge over Nun's Island, MONTREAL.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $53,000, other public works $88,000, industrial buildings $110,000; other buildings $400,000. Also Foreign projects of $1,000,000 and more in size of interest to American contractors.

By Regions & Classes of Construction
(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED
New England — **Middle West**
Middle Atlantic — **Mississippi to Rockies**
South — **Far West**
PROPOSED WORK
Water Supply — **Public Buildings**
Sewers, Waste Disposal — **Mass Housing**
Bridges — **Commercial Buildings**
Streets & Roads — **Industrial Buildings**
Earthwork, Waterways — **Unclassified**

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily issue in which last previous report was published.

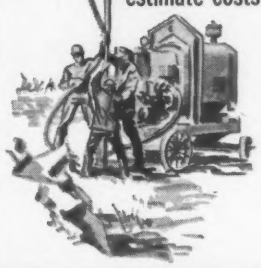
OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over
ENR Engineering News-Record
CD Construction Daily

For additional reports see Construction Daily.

IF IT'S A
WET JOB
let Griffin analyze your ground water problem and estimate costs



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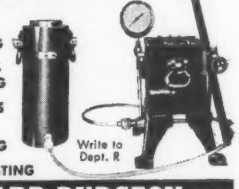
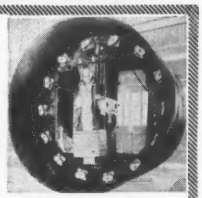
W. Palm Bch., Fla. • Hammond, Ind.

DUDGEON HYDRAULIC JACKS
SALES RENTALS
CAPACITY TO 600 TONS
FOR:
PILE TESTING
UNDER-PINNING
BRIDGES
PIPE PUSHING
SOIL TESTING



Write to Dept. R
RICHARD DUDGEON INC.
789 BERGEN ST. • ST 9-4040 • BROOKLYN, N. Y.

SHIELDS AND SAND HOG EQUIPMENT



Bulletin No. 23 shows installations of Mayo shields, cylindrical air locks, lock doors, medical locks and tunnel cars. Send for your free copy.

MAYO
TUNNEL AND MINE EQUIPMENT
Lancaster, Penna.

QUE. National Harbors Bd., West Block, Parliament Bldgs., Ottawa, Ont. Bids Aug. 13. CD 7/10.

BUILDINGS—LB & CA

▲ **Stearns-Roger Engineering Co.,** 330 9th Ave. SW, Calgary, Alta., CA Est. **$5,000,000,** CHEMICAL PLANT, East Calgary, CALGARY, ALTA. Consolidated Mining & Smelting Co. of Canada Ltd., 1230 10th Ave. SW, Calgary, Alta. CD 3/25.

▲ **Commonwealth Constr. Co.,** 700 Taylor, Vancouver, B. C., LB **$1,277,375,** rein.-con. INDIAN RESIDENTIAL SCHOOL, MISSION CITY, B. C. Dpt. P. Wks., 406 Hunter Bldg., Ottawa, Ont. Gardiner, Thornton, Gathe & Assocs., 1520 Alberni Vancouver, B. C., archts.

▲ **Eastern Constr. Co. Ltd.,** Box 96, Walkerville, Ont. CA Est. **$1,000,000,** two 17,000 sq. ft. rein.-con. SALES AND SERVICE CENTERS, Richmond Rd. and Woodroffe Ave., Kirkwood Ave. and The Queensway, OTTAWA, ONT. Chrysler Corp. of Canada Ltd., 2450 Chrysler Center, Windsor, Ont. Awarded Sept. 7.

PUERTO RICO

BUILDINGS—LB & CA

▲ **J. R. Nieves & Co., Inc.,** Box 5152 Puerta de Tierra Station, Puerto Rico; LB **$2,437,000** (6 bidders), 2 and 3 story, 252 unit PUBLIC HOUSING DEVELOPMENT PR-4-10, MAYAGUEZ, PUERTO RICO. Puerto Rico Housing & Urban Renewal Admin., Box 397, Rio Piedras, Puerto Rico. Bids Sept. 4. CD 8/25.

▲ **Metropolitan Builders, Inc.,** 1501 Ashford Ave., San Juan, Puerto Rico, Owner Builds, **$2,200,000,** 12 story, 110,000 sq. ft. 84 APARTMENTS, ground level GARAGE, swimming pool, SAN JUAN, PUERTO RICO.

▲ **Metropolitan Builders, Inc.,** 1501 Ashford Ave., San Juan, Puerto Rico, Owner Builds, **$2,100,000,** 14 story 112,000 sq. ft. 80-unit APARTMENT, 150 car GARAGE, SAN JUAN, PUERTO RICO.

LATIN AMERICA

BUILDINGS—LB & CA

▲ **British Thomson Houston Export Co.,** Crown House, Aldwych W.C. 2, London, England, CA POWER STATION, Juchitan, Oaxaca State and another unannounced site, MEXICO. Federal Electric Comn., Mexico City, Mexico. Total est. **$4,000,000.** CD 5/5/55; **International Combustion of England,** 19 Woburn Pl., London W.C.I., England, CA, boilers for power house (Mexico)

PROPOSED PROJECTS

WATER SUPPLY

▲ **O., Columbus**—City, City Hall,
12 in. water line in Lum Creek Dr. from end of existing 12 in. line to Refugee Rd., **$100,000.** Constr. 1964;
12 in. water line Courtright Rd. from Livingston to Petzinger Rds., **$67,000.** Constr. 1964;
16 in. water line E. Broad St. from point east of McNaughton Rd. to Reynoldsburg-New Albany Rd., **$96,000.** Constr. 1962-3;
East Side Force Main, formerly known as Seltzer Rd., water line, **$2,143,700;**
12 in. water line, Groveport Rd. from Lockbourne to Williams Rds., **$60,000.** Constr. 1964;
12 in. water line, Hamilton Ave. from Livingston Ave. to Grove Rd., **$53,000.** Constr. 1963;
water line booster station, Karl Rd. and Rte. 161, 24 in. line Karl Rd. from Morse to Rte. 161 and 20 in. line Rte. 161 from Karl to Sinclair, **$708,800;**
16 in. water line, Lockbourne Rd. from Marion Rd. to Alum Creek Dr., **$160,000.** Constr. 1962-4;
2 m.g. elevated water tank, Livingston Ave.-Waverly Rd. area, **$350,000;**
16 in. water line, Livingston Ave. from Shady Lane to Noe-Bixby Rd., 12 in. line Livingston from Noe-Bixby Rd. to McNaughton, **$145,000.** Constr. 1962-3;
12 in. water line Rte. 33 from Livingston Ave. to Petzinger Rd., **$70,000.** Constr. 1962-3;
12 in. water line McNaughton Rd. from Broad St. to Livingston Ave., **$138,000;**
12 in. water line Petzinger Rd. from Rte. 33 to Courtright Rd., **$70,000.** Constr. 1964;
24 in. line Rathbone Rd. from High St. to Olentangy River Rd. and 24 in. line Olentangy River Rd. from Rathbone Rd. to existing 20 in. line; 24 in. line Highland Dr. from Olentangy River Rd. to Upper Arlington line; booster station, Olentangy River Rd. and Highland Dr., **$508,000;**
12 in. water line from Refugee Rd. to Groveport Rd. in Lockbourne Rd., **$57,000.** Constr. 1961;
three 10,000 gal. pumps and bldgs. to house them, Scioto River pumping station, **$200,000.** Constr. 1963;
line equipment, Scioto River filtration plant, **$200,000.** Constr. 1962;
2 m.g. elevated water tank, South End, $350,000. Constr. 1961;
12 in. water line, Williams Rd. from 8th St. to Groveport Rd., **$80,000.** Constr. 1964.

▲ **Tex., Corpus Christi**—City, City Hall, bonds voted Aug. 29, WW, **$3,500,000.** CD 11/30/53.

▲ **Tex., Fort Worth**—Tarrant Co., W. C. & I. D. #1, Joe B. Hogsett, pres., water supply, reservoir, supply line at Cedar Creek. **$55,000,000.** Freese, Nichols & Endress, 407 Danciger bldg., Fort Worth, consult. engrs.

▲ **Utah, Salt Lake City**—Salt Lake County Water Conservancy Dist., 3383 S. Third East, bond election Oct. 6, water lines, wells, treatment plant. **$5,000,000.** CD 9/11/58.

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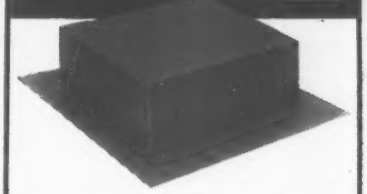

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▲ **Wash., Point Roberts**—Point Roberts Water Dist., voted bonds Aug. 29, water sys., using wells as source of supply, $3,000,000. CD 5/22.

SEWERS, WASTE DISPOSAL

▲ **Fla., West Palm Beach**—City, City Hall, 350-600 tons per day capacity incinerator. $1,498,000.

▲ **Ill., Chicago**—City, City Hall, bond election Nov. 3 sewers extens. Beverly-Calumet and Wellington Ave. systems. $15,000,000.

▲ **Ill., Chicago**—Dpt. Purchases, City Hall, Zone 2, 1,200 ton daily capacity garbage incinerator, 39th and Iron Sts. $5,500,000. Bids in January. CD 9/15/58.

▲ **Me., Old Orchard Beach**—Town, Town Hall, sewerage sys. and filtration plant. $1,000,000. Stewart Assoc. Inc., 21 Main St., Kennebunk, engr. Constr. 1960.

▲ **Mich., Woodstock**—Rollin-Woodstock Sewage Disposal Sys. and Water Supply Sys., Inc., Town Hall, Woodstock, sewage disposal sys. for Devils Lake and Round Lake, resort area, Rollins and Woodstock Twps., Lenawee Co. $2,000,000. Angelo Marino, 2 E. First St., Monroe, Mich., engr. CD 1/7, under Mich., Devils Lake.

▲ **Tex., Corpus Christi**—City, City Hall, voted bonds Aug. 29, Sanitary Sewers, $1,100,000. CD 5/16/58.

BRIDGES

▲ **CONNECTICUT**—State Hy. Dpt., 24 Wolcott Hill Rd., Wethersfield,
New Haven Co.—bridge across Naugatuck River from Rte. 63 interchange at Rte. 8 to present location of Rte. 63 on opposite side of river; widn. Meadow St., $1,500,000. Bids in Fall.

▲ **Ill., Chicago**—City, City Hall, bond election Nov. 3, Halsted St. and Chicago Ave. bridge, Archer Ave. and Chicago River bridge, Damen Ave. bridge. $15,000,000. Steve Michuda, 320 N. Clark St., Zone 10, owners' engr. CD 9/25/57.

▲ **RHODE ISLAND**—State R. I. & Prov. Plants, Div. Purchase, State House, Providence,
Providence—Seekonk River bridge to replace Red Bridge. $8,500,000. Charles A. Maguire & Assoc., Turks Head Bldg., Providence, consult. engrs. Constr. 1960.

STREETS AND ROADS

▲ **NEW YORK**—State Dpt. P. Wks., State Office Bldg. Albany
Clinton Co—3.7 mi. section Rte. 3 Plattsburgh between Cornelia St. and Tom Miller Rd., FAI Project. $1,000,000.

▲ **NEW YORK**—State Dpt. P. Wks., State Office Bldg., Albany,
Jefferson and St. Lawrence Counties—24 mi. hy. along St. Lawrence River between Alexandria Bay and Morristown north of Watertown, FAI Project, $8,000,000.

▲ **OHIO**—Dpt. Hys., State Dpt. Bldgs., Columbus, Zone 15,
Lorain Co.—imprv. intersection Rte. 76 and 303, Belden, $1,058,000. Ray Stull, Div. Location and Design Eng., Ashland, engr.

▲ **Tex., Fort Worth**—City, City Hall, street improvement, incl. widening, repaving-Long 33rd St. from Jacksboro Hy. to Sylvania, $1,695,000. Carter & Burgess, 1100 Macon St., Fort Worth, consult. engrs. CD 11/12.

▲ **ONTARIO**—Dpt. Hys., Parliament Bldgs., Toronto,
Cooksville—wid'n to four lanes Hy. 10 from Port Credit to Cooksville at Hy. 10 and Queen Elizabetn Way, underpass under Canadian National Railways main line level crossing of Hy. 10 in Port Credit $2,000,000. CD 12/8/59.

EARTHWORK, WATERWAYS

▲ **Indiana**—Public Service Co. of Indiana, 1000 Main St., Plainfield, hydro-eleceric power plant, three 41,500 HP. turbines, 27,000 kilowatt generator, transmission line, substation, $24,800,000. Sargent & Lundy, 140 S. Dearborn St., Chicago, Ill., survey engrs., Harza Engr. Co., 400 W. Madison St., Chicago, Ill., consult. engr.

▲ **Saskatchewan**—Saskatchewan Power Corp., 1739 Cornwall St., Regina, hydro-electric proj., Saskatchewan River, 150 mi. northeast of Prince Albert, Squaw Rapids, $25,000,000. Crippen Wright Engineering Ltd., 207 W. Hastings St., Vancouver, B. C., consult. engr. CD 12/15/44.

AIRPORTS

▲† **Calif., Lemoore Naval Air Station**—FACILITIES—Dist. Pub. Works Office, 12 ND, San Bruno, plans by Urbahn, Brayton & Burrows, and Milton T. Pflueger, consult. engrs.-archts; 580 Market St., San Francisco, Military Operational, Personnel and Administrative facilities, $5,000,000; plans by Blanchard & Maher, 40 First St., San Francisco, storm drainage, lift station and outfall at Admin. area, $600,000; Utilities Bldg. and Heating equip., Bldg., $300,000, Naval Air Station, Tudor Eng. Co., 595 Mission St., and Keller & Gannon, 126 Post, San Francisco, consult. engrs. latter 2 projects. CD 4/10/58.

▲ **Ind., Lafayette**—AIRPORT IMPRVS.—Bd. Aviation Comrs., 120 N. 10 St., 5,400 lin. ft. runways, extending runway, instrument runway and taxi strips, terminal, at airport. $2,200,000. Clyde E. Williams & Assocs., 720 E. 38 St., Indianapolis, consult. engrs. CD 9/1.

▲ **Neb., Lincoln**—AIRPORT—Lincoln Airport Authority, City Hall, municipal airport, eastern edge of city, incl. 150 x 6,700 ft. N-S concrete paved runway, control towers, hangars, administration bldg., grading, fencing, water, sewer, gas and electrical lines, etc. $3,500,000.

▲ **O., Cincinnati**—AIRPORT—City, City Hall, 8,000 ft. runway imprvs., Lunken Airport, $5,000,000; instrument landing sys., hangar relocations, control tower, admin. bldg. imprvs., Lunken Airport, $1,500,000. T. J. Montgomery, engr. City, City Hall.

Tex., Houston—MAINTENANCE CENTER—Eastern Airlines, Inc., M & M Bldg., Maintenance Center, leased 5.8-acres NE Sec. of airport, $400,000.

LATIN AMERICA

▲ **Venezuela, Maracaibo**—FLOUR MILL—Pillsbury Mills, Inc., Pillsbury Bldg., Minneapolis, Minn., U.S.A., flour mill, $2,000,000-$2,500,000.

PUERTO RICO

▲ **Puerto Rico**—HOMES—Island Development, Inc., Chase Manhattan Bank, Stop 23, San Juan, plans by Hector Huyke, calle Domenech 177, 200 homes. $1,800,000. Chas. Hitt, c/o owner, staff engr.

▲ **Puerto Rico**—AVIATION GASOLINE PIPE LINE—Island Pipeline & Storage Co., Inc., c/o Lcdo. G. Vivas, P. O. Box 951, Ponce, Puerto Rico, 89 mi. six in. aviation gasoline products line between San Juan and Ramey Air Force Base, San Juan-Aguadilla, $2,251,000. Pipeline Technologists, Inc., 3431 W. Alabama, Houston, Tex., U.S.A., consult. engrs.

▲ **Puerto Rico, San Juan**—BANK—Banco Popular de Puerto Rico, Calle Tetuan, San Juan, plans by Chauncey W. Riley, 24 W. 45th St., New York, N. Y. U. S. A., 21 floor bank and office, 800 car parking. $6,000,000.

▲ **Puerto Rico, San Juan**—APARTMENTS—Scenic Homes Corp., 4th floor, Chase Manhattan Bank, Stop 23, plans by Hector Llenza & Gautier, Chase Manhattan Bank, Stop 23, three six story 33 units apartments, Pine Grove. $2,500,000.

PUBLIC BUILDINGS

▲ **Ala., Montgomery**—SCHOOL—Alabama State Bd. Educ., State Capitol, State Trade School. $1,000,000.

▲ **Alaska, Anchorage**—PUBLIC SAFETY BLDG.—City, City Hall, Bond Election Oct. 6, public safety bldg. and 2 fire stations. $1,750,000.

▲ **D. C., Wash.**—REPAIR SHOP—District Columbia, Govt. Bldgs. & Grounds, 499 Pa. Ave., N. W. Fire Dpt. repair shop with Engine Co. at M and ½ Sts. S. W., $1,000,000.

▲ **D. C., Wash.**—SCHOOLS—D. C. Govt. Bldgs. & Grounds, 499 Pa. Ave. N.W., Whittier School addn., 5 and Sheridan Sts. N.W., $490,000; Rudolph Elementary School addn., 2 and Ingraham Sts. N.W., $690,000, plans by Victor B. Spector & Assocs., 2107 K St. N.W., elementary school, 49 and Lee Sts. N.E., $900,000, plans by A. L. Anderson, 1726 M St. N.W., elementary school, 15 and Rosedale Sts. N.E., $800,000, plans by Mills, Petticord & Mills, 3308 14 St. N.W., junior high school, South Dakota Ave. and Hamilton St. N.E., $2,900,000, plans by Johnson & Boutin, 1417 22 St. N.W., elementary school, 12 and E Sts. S.E., $900,000, plans by Hayes, Seay, Seay, Mattern & Mattern, 1707 H St. N.W., junior high school, 58 and Dix Sts. N.E., $2,700,000.

▲† **D. C., Wash.**—HEADQUARTERS—Federal Deposit Insurance Corp., 14 and F Sts., (National Press Bldg.) N. W., headquarters, 1703 New York Ave., N. W. General Services Admin. will handle construction $6,000,000.

▲† **Idaho, Arco**—NUCLEAR TEST PLANT—Atomic Energy Comn., Idaho Operations Office, Idaho Falls, nuclear test plant, $5,000,000. Combustion Engineering, Inc., Poquonock Ave., Windsor, Conn., consult. engr. CD 7/29.

▲ **Ill., Antioch**—SCHOOL—Village, Village Hall, bond election Oct. 10, high school, Deep Lake and Loon Lake Rds., $1,785,000. CD 5/28.

▲ **Ill., Chicago**—MEDICAL RESEARCH, etc.—Comrs. Cook Co., County Bldg., Zone 2, bond election Nov. 3, Hektoen Institute for Medical Research, morgue, 629 S. Wood St., $5,125,000. CD 6/11/57; Cook County Hospital alterations, air-cond. receiving bldg., etc., 1835 W. Harrison St., $750,000. CD 3/6; interne dormitory addn., Karl Meyer Hall, $750,000; County Morgue rehab., 1828 W. Polk St., $750,000.

▲ **Ill., Freeport**—SCHOOL—City, City Hall, bond election Oct. 31, high school addn. and remodeling, $1,400,000. Childs & Smith, 20 N. Wacker Dr., Chicago, Zone 6, archt.

▲ **Ill., Oak Park**—LIBRARY—City, City Hall, bond election Oct. 25, library, $1,300,000.

▲† **Md., Baltimore**—SOCIAL SECURITY HEADQUARTERS ADDN.—General Service Admin., Rm. 1304, General Service Bldg. 19 and F St. N.W., Wash., D. C., plans by Meyer & Ayer, 2315 St. Paul St., Baltimore 2, Md. and Fisher Nes, Campbell & Assoc., 2120 N. Charles St., Baltimore 18, Md., 5 story 200x300 ft. brick, limestone, rein-con. air-condition, etc. social security headquarters addn., Woodlawn. $5,000,000. Whitman, Requardt & Assoc., 1304 St. Paul St., Baltimore 2, Md., mechanical engrs. Van R. P. Saxe, 1701 St. Paul St., Baltimore 2, Md., structural engr.

▲ **Minn., Rochester**—SCHOOLS—Bd. Educ., $5,000,000 bond election Sept. 29, schools.

▲ **Minn., St. Paul Park**—SCHOOLS—Bd. Educ., $4,000,000 bond election Oct. 6, elementary schools.

(Continued on page 64)

"New" handyman for home-builders

Unusual uses of Michigan Tractor Shovels reduces costs for Montana contractor on wide variety of tasks . . . including digging basements

On the Riverview Terrace housing project in Great Falls, Montana—where William N. Kessner, Inc. is building 150 $150,000 homes per year—a pair of Michigan Tractor Shovels has reduced costs of virtually every material handling operation!

Their versatility has prompted company officials to term the two rigs "as necessary to the home-builder as 2 x 4's."

Yet, not so long ago, Kessner's original Michigan—a Model 75A with two yard bucket—was used *exclusively* for loading spoil into haul trucks. But the machine soon showed it had free time. So it began cleaning spillage off driveways and sidewalks, too. Then Kessner put it to work backfilling around foundations and service lines. Then clearing brush and debris. *Then digging the basements!* (Rig worked so well here, this unusual rubber-tired task has become a Michigan "specialty." Typical basement, 24 x 30 ft by 6 ft deep, through sandy clay and gumbo, takes about three hours to dig and trim.)

The second Michigan, another 80 hp Model 75A, is equipped with a set of forks and assigned primarily to handling the building supplies. It too has produced a major time-saving. Instead of fabricating on the job, carpenters now nail together large wall sections of each home under the ideal working conditions of the shop. Each completed section—loaded by the Michigan fork lift—is trucked to the appropriate site; then unloaded, lifted and held by the Michigan for precision placement on the foundation. For the average house, the four "prefab" walls can thus be set in ¾ hour! The saving? Literally days over customary erect-in-place methods.

There are dozens of time-saving construction uses like these for Michigan Tractor Shovels and their many buckets and attachments (including crane hooks, back hoes, sweepers, backfiller blades, scarifiers). Make a list of material-handling chores you'd like to speed (or make more economical) . . . then ask your Michigan Distributor for a demonstration of each. Judge for yourself. We think you'll like what you see.

Wall section, prefabbed at shop, is steadied in vertical position by Michigan for precision spotting on concrete foundation

Fork-equipped Michigan Model 75A picks 2,000 board feet off haul truck, delivers it to

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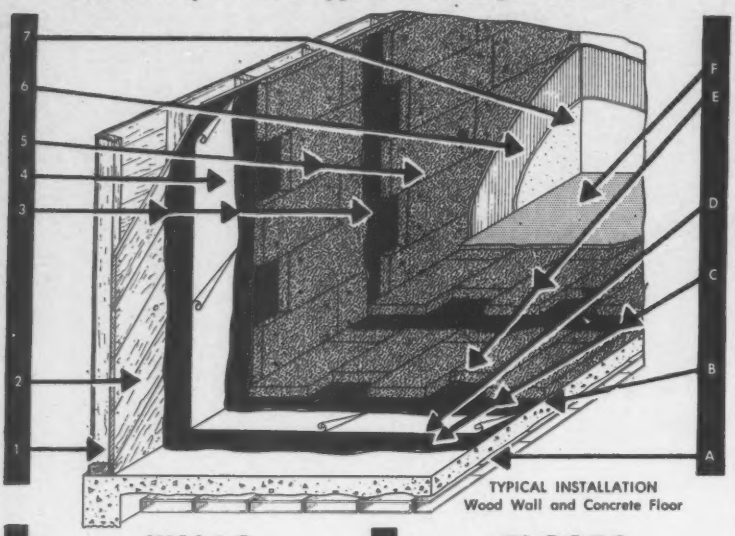

TYPICAL INSTALLATION
Wood Wall and Concrete Floor

WALLS

1 **WOOD STUDS**

2 **WOOD SHEATHING**

3 **LAYKOLD INSULATION ADHESIVE**
Brush or spray at 23 sq. ft. per gallon. Allow to set (turn black) then press on membrane or blocks

4 **VAPOR BARRIER MEMBRANE**
Press into adhesive. Use 3" laps; 1 to 3 layers.

5 **INSULATION BLOCKS**
When first layer has been placed, set skewers and repeat for next layer of insulation.

6 **LAYKOLD MASTIC WEATHERCOAT**
Point joints and trowel scratch coat at 8 sq. ft. per gallon. Let dry.

7 **LAYKOLD WEATHERCOAT**
Trowel at 15 sq. ft. per gallon for water-resistant finish.

FLOORS

A **TILE OR GRAVEL FILL**
For ventilation vs. freezing of the sub-grade.

B **CONCRETE SUB-SLAB**
If new, use Hydropel integral admix at 1½ gallons per sack of cement. Gives a dry slab.

C **LAYKOLD INSULATION ADHESIVE**
Spray, brush or squeegee at 23 sq. ft. per gallon. Let set (turn black). Then press on membrane and block insulation.

D **VAPOR BARRIER MEMBRANE**
Press into the adhesive. Use 3" laps—1 to 3 layers.

E **INSULATION BLOCKS**

F **2" LAYKOLD HEAVY DUTY FLOOR MASTIC**

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(Continued from page 62)

W. Butler Co., 1300 Minn. Bldg., St. Paul, Minn., archts.

▲† **Mo., St. Louis County**—TRAINING CENTER—Naval Reserve Training Center, Lambert-St. Louis Municipal Airport, plans by Hellmuth, Obata & Kassabaum, Inc., 315 N. 10th St., St. Louis, Mo., 1 story, 47,814 sq. ft., rein.-con. Naval and Marine Corps Training Center, Lambert-St. Louis Municipal Airport, Natural Bridge Rd. at Airport Rd. $1,067,000. Bids 1960. CD 6/23, under Mo., St. Louis, Dist. P. Wks. Office, as owner.

▲ **N. J., Ridgefield Park**—SCHOOL—Bd. Educ. Village of Ridgefield Park, high school. $2,000,000.

▲ **N. Y., New Paltz**—FINE ARTS—State Dpt. P. Wks., State Office Bldg., Albany, plans by Ballard, Todd & Snibbe, 123 E. 77th St., New York 21, N. Y., Fine Arts, State University Teachers College. $3,000,000. CD 3/27/57.

▲ **O., Cincinnati**—SCHOOLS—Colerain Twp. School Dist., 4850 Poole Rd., bond election Nov. 3, schools. $1,300,000.

▲ **O., Cincinnati**—SCHOOLS—Oak Hills School Dist., 3900 Race Rd., bond election Nov. 3, schools, $1,300,000. CD 11/10.

▲ **Pa., Harrisburg**—OFFICE—General State Authority, 18th and Herr Sts., 3 story, steel, brick office building, offices and laboratory facilities of State Dept. Agriculture, east of Farm Show Building, $2,000,000.

▲ **S. C., Walhalla**—HOSPITAL—Oconee County, c/o Lockwood Greene Engineering, archts., Montgomery Bldg., Spartanburg, hospital, $2,000,000. CD 12/16/58.

▲ **Tex., Corpus Christi**—HOSPITAL—City, City Hall of Corpus Christi, and Nueces County, Courthouse, voted bonds Aug. 29, Memorial Hospital Addn. $5,000,000. Smyth & Smyth, Gulf Security Bldg., archts. O'Connell & Probst, 504 W. 7th St., Austin, and Rob. L. Vogler, 225 Oleander St., Corpus Christi, consult. engrs. CD 8/21.

▲ **Vt., Burlington**—SCHOOLS—City Burlington, School Dept., Burlington, plans by Freeman, French & Freeman, 158 Bank St., Junior-Senior High School. $1,000,000. Constr. 1960. CD 12/20/57.

▲ **Va., Norfolk**—LIBRARY—City, City Hall, plans by Lubin, McCaughy and Associates, 220 W. Freemason St., Norfolk, steel, glass, marble, stone, Kirn Memorial Library, City Hall Ave., Bank, Atlantic and Plume Sts. Construction 1960, $1,500,000.

▲ **Wis., Wauwatosa**—CHILDREN'S COURT CENTER—Milwaukee Co., Milwaukee, plans by Grellinger-Rose Assocs., Inc., 757 N. Broadway, Milwaukee, Zone 2, children's court center, $2,486,000. CD 12/9/52, under Detention Home, Wis., Milwaukee.

COMMERCIAL BUILDINGS

▲ **Ariz., Tucson** — SHOPPING CENTER, etc. — Tanque Verde Park Central Development Co., c/o Johnson, Engen & D'Agostino, archts., 4868 Oak Park, Encino, Calif., 2 story, 50,000 sq. ft. circular, Tanque Verde Park Central Shopping Center, Tanque Verde Rd. near Wilmont Rd., $3,000,000; Tanque Verde Park Central Sports Center, incl. ice hockey rink convertible to auditorium seating 12,000, 40 bowling lanes, indoor swimming pool, $3,500,000; Tanque Verde Park Central Apartments; one 200 units apartment motel type apartments, 6 swimming pool, $3,000,000.

▲ **Calif., Canoga Park** — DWELLINGS — Valley Park Estates, 23000 Van Nuys St., Canoga Park, plans by Duncan & Conroy, 13605 Ventura Blvd., Sherman Oaks, 460 dwellings, Tract 21696. $6,678,200.

▲ **Calif., Pebble Beach**—HOSPITAL—Peninsula Community Hospital, c/o Edward D. Stone, archt., 635 Bryant St., Palo Alto, 1 story, concrete, 100-bed hospital, two pool areas. $2,500,000.

▲ **Colo., Denver**—HOSPITAL—St. Joseph's Hospital, 1818 Humboldt, plans by Monroe, Irwin & Dunham, 125 Wadsworth, hospital expansion. $7,500,000.

▲ **Conn., Glastonbury**—HOUSES—Colonial Homes, Inc., 254 Foote Rd., South Glastonbury, 170 houses, Carriage Drive, $3,740,000; 25 houses, Addison Rd., $475,000.

▲ **Conn., Ledyard**—HOUSES, etc.—Bliven Realty Co., 266 W. Main St., Mystic, 153 houses "Colonel Ledyard Estates" Second Section, Colonel Ladyard Highway, $1,987,470; shopping center, Colonel Ledyard Highway, $400,000.

▲ **Conn., Norwich**—HOUSES—Barber & Stevens, Inc., 266 Woodland St., Hartford, 120 houses, "Kitemaug Orchard" $1,200,000.

▲ **Conn., Orange**—STORE—Walter G. Farr Jr., atty., 205 Church St., New Haven, department store, Boston Post Rd. $2,500,000.

Conn., Plainville—D. & D. Builders, 22 Glenbrook Rd., Kensington, 40 houses, Camp St., $400,000.

▲ **Conn., Southington**—HOUSES—Rowland Cochraine, Meadowood, 156 houses, "Meadowood" Second Section, Laurel Lane, $1,560,000.

▲ **Ga., Brunswick**—HOTEL—J. W. Linder, c/o Wall Realty Co., 322 Ponce DeLeon Ave. N. E., Atlanta, plans by Abreu & Robeson, 141 Walton St. N.W., Atlanta, 200 unit hotel, Jekyll Island. $1,800,000.

▲ **Hawaii, Honolulu**—APARTMENT—Queen Kapiolani Inc., 220 Kaiulani, Honolulu, plans by Ed. T. Miyamasu, 824 Fort St., Honolulu and Richard R. Iwanaga, 2217 Hoonanea, Honolulu, 9-story steel and concrete Apartment, 2 floors parking, swimming pool, $1,000,000.

▲ **Ill., Chicago**—TRADE CENTER—Owners, c/o A. M. Brown, 11 W. Washington St., plans by Skidmore,

(Continued on page 66)

Rubber-tired dozer plugs $10 per hour profit leak

The problem was sand. 3,400,000 yds of blow sand, playing its usual havoc with crawler tracks. Particularly with push-dozer tracks. Contractors, rebuilding a federal highway in Indiana, found their 320 hp pusher, working this rough material, needed a track repair job *every 700 hours*. Cost, $7,000! Or $10 an hour—over and above normal operating costs.

When need arose for a second pusher, contractors got ready to shell out another $10 an hour.

Solution—rubber

"Before we do," said the project supt and a 29-year veteran in the business, "let's look at the latest rubber-tired dozers. Sand shouldn't be nearly as hard on rubber as it is on steel tracks."

"Agreed," management answered. "But any rubber-shod rig we buy *must* do as good a pushing job as our 320 hp crawler!"

One machine did. A 375 hp Michigan Model 380 Dozer brought in by the Clark distributor. Contractors bought it!

15 pay yds: 20 to 80 seconds

From that day on, the Michigan and the big crawler together handled push-loading of a fleet of seven 25-yd scrapers. Performance of the two pushers was very much the same. Per-scraper load time, either loading unit, varied from 20 to 80 seconds (depending upon the soil). Scraper loads, with either crawler or Michigan, measured 15-plus pay yds. Output, per pusher, with scrapers on one mile haul, ran about 2,150 pay yds per 8-hour day.

Speed provides bonus

Why was the contractor so pleased? Well, he eliminated $10 an hour in track maintenance, at no decrease in push-loading efficiency. He also got a bonus in speed. One day, for instance, the Michigan alone spread all fill . . . a job which normally took two 12t[illegible] the pushers had to work two different borrow areas in one day, the 25 mph Michigan reached the second site so quickly it got in half an hour's work while the crawler was still creeping along the road shoulder. And the firm expects to use the Michigan on still other applications on other jobs. Says the supt, "This unit sure is *not* just a special-purpose sand machine. It can do as good a job as a crawler—or a better one—on about 70% of what some people call "big crawler" applications. Mud, not as good maybe. But sand, clay, dirt—excellent!"

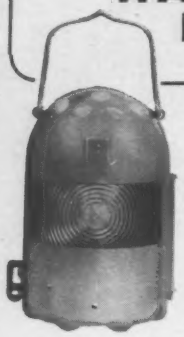
High dozing speeds let the one Michigan do work of two crawlers, spreading fill.

See for yourself. Write our sales department, in Benton Harbor for data. Or call your nearest Michigan Distributor for a demonstration.

CLARK EQUIPMENT

Michigan is a registered trademark of
Clark Equipment Company
Construction Machinery Division
2401 Pipestone Road
Benton Harbor 14, Michigan

Flashing Kerosene WARNING LIGHT



- The "Blitz" warning light operates for 50 hours on ½ pint of kerosene.

Produces sharp, evenly spaced flashes at rate of 50 to 60 per minute depending on setting. Never out between flashes — barricade is never dark. Operates under extreme weather conditions.

Magnifies its light source 30 times through two 3¼ x 8" plastic prismatic lenses. Available in either red or yellow.

Simple to maintain; no repairs necessary since there are no moving parts. Weight: 2½ lb. Height: 10½ in.

Used by contractors, highway departments, municipalities, truckers, utilities.

Dealer Iquiries Invited

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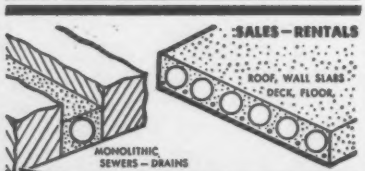

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(Continued from page 64)

Owings & Morrill, archts.-engrs., 30 W. Monroe St., 22 story, International Trade Center, 550 N. Michigan Ave., $15,000,000.

▲ **Ind., Noblesville** — HOSPITAL — Riverview Hospital Foundation, plans by Walter Scholer & Assocs., 1114 State St., Lafayette, 4 story wing hospital addn., $1,000,000. Bids in 1962. CD 1/16/59.

▲ **Ind., Valparaiso**—HOSPITAL—Porter County, County Bldg., plans by Schmidt Garden & Erikson, 104 S. Michigan Ave., Chicago, Ill., 85-bed Porter County Memorial Hospital addn., $1,440,000. CD 9/25/57.

▲ **Iowa, Cedar Rapids**—SHOPPING CENTER—Cedar Hills Shopping Center, c/o Harold M. Becker, 218 Guaranty Bldg., plans by Crites, Peiffer & McConnell, 306 10th St. N. E. shopping center, 500-car parking area, northwestern edge of city, $1,000,000. Constr. soon.

▲ **Ky., Louisville**—APARTMENT, etc.—F. W. Drybrough, 620 S. 5th St., plans by Arrasmith & Tyler, 501 Park Ave., apartment and 27 stores, 4th and York St. Over $5,000,000. Southern Engineering Co., 322 W. Jefferson, engr. CD 5/28.

▲ **Ky., Paducah** — SHOPPING CENTER — Syndicate headed by John W. Keiler II, c/o Columbia Amusement Co., Broadway, plans by Melvin R. Krumm, 520 W. 7 St., Los Angeles, Calif. and L. Potter Smith, 2221 Broadway, Paducah, Ky., shopping center, incl. Penney Store, Broadway, 5th, 4th and Jefferson Sts. $2,000,000 Bids about Oct. 3. CD 2/18.

▲ **Mo., Affton (St. Louis 23 P.O.)**—APARTMENTS—Lindenwood Realty Co., 9100 Gravois Ave., Affton 23, Mo., sixty-six 1 story, three-family apartments, Vasel, Langley, Maxwell and Elsa Aves. $2,000,000.

▲ **Mo., St. Louis**—BANK, etc.—Blue Cross and Blue Shield Plans, c/o Group Hospital Service, Inc., 4904 Delmar Blvd., Zone 8, plans by Hellmuth, Obata & Kassabaum, Inc., 315 N. 10th St., Zone 1, 6 story bank and office, south side Olive St. between 14 and 15 Sts. $1,500,000. CD 9/8.

▲ **N. J., Atlantic City**—HOSPITAL—Roman Catholic Diocese of Camden, 8 and Cooper Sts., Camden, plans by Nolen & Swinburne, 226 S. 16 St., Phila., Pa., Immaculate Heart of Mary Hospital, $2,000,000. CD 7/24.

▲ **N. J., Newark**—APARTMENT—Atlantic Funding Corp., 543 Mount Prospect Ave., plans by Isadore Naftali, 312 High St., 16 story apartment at Woodside and Mount Prospect Ave. $3,000,000. CD 8/27.

▲ **N. J., Trenton**—SHOPPING CENTER, etc.—Louis H. Cahan Co., 140 W. State St., shopping center, 40-lane bowling alley, Parkway and Scotch Rds. $5,000,000.

▲ **N. Y., Syracuse**—HOTEL—Schine Enterprises, Inc., 350 Fifth Ave., New York 1, N. Y., plans by Lapidus, Kornblath, Horle & Liebman, 256 E. 49th St., New York 17, N. Y., 2 story, 150-room hotel, outdoor swimming pool, adjacent to Carrier Circle. $2,000,000.

▲ **N. Y., Yonkers** — SHOPPING CENTER — Tishman Realty & Constr. Co., 666 Fifth Ave., New York Zone 19, N. Y., shopping center, Central Park Ave. adjacent to S. Klein Dpt. Store, $1,250,000.

▲ **N. C., Greensboro**—OFFICE—Pilot Life Insurance Co., Sedgefield, Greensboro, plans by McMinn, Norfleet & Wicker, 2828 Lawndale Dr., 6 story, 70,000 sq. ft. office, addn., Sedgefield, $1,500,000.

▲ **O., Mentor**—SHOPPING CENTER—Edward J. DeBartolo & Assocs., 2620 Market St., Youngstown, shopping center, Rtes. 20 and 84. Over $1,000,000.

▲ **O., Middleburgh Heights**—APARTMENT—Owner, c/o Philip Comella, 11320 Brookpark Rd., Cleveland, Zone 30, apartment development, Bagley Rd., east of Pearl. $3,500,000.

▲ **O., Parma**—SCHOOL, etc.—Catholic Diocese of Cleveland, 1027 Superior Ave., Cleveland, Zone 14, plans by Stickle & Assocs., 2422 Prospect Ave., Cleveland, Zone 15, St. Anthony of Padua High School, 6750 State Rd., $2,000,000; church for St. Anthony of Padua, $500,000.

▲ **O., Perrysburg**—SEMINARY—Divine Work Catholic Seminary, Techny, Ill., plans by Munger & Munger, National Bank Bldg., Toledo, seminary. $1,000,000.

▲ **O., Youngstown**—APARTMENT—Kennedy Park Terrace, Inc., 300 Film Bldg., 2108 Payne Ave., Cleveland, Zone 14, plans by Weinberg & Teare, Citizens Bldg., Cleveland, Zone 14, 8 apartments. $1,300,000.

▲ **Pa., Willow Grove**—BOWLING ALLEY—Hankin Bros., Willow Grove, plans by Gordon F. Powers, 3367 Atlantic Ave., Long Beach, 116 lane brick bowling alley, restaurant, lounge, etc. $1,500,000. CD 4/8.

▲ **S. C., North Augusta**—SHOPPING CENTER—North Augusta Plaza, c/o Hugh K. Marshall, archt., 1107 W. Rugby Ave., College Park, Ga., Shopping Center, $2,500,000.

▲ **Tex., Houston**—SHOPPING CENTER, etc.—Owner, c/o Carl W. Cohen, Cadmah Realty Co., 1022 Shelterwood Dr., shopping center, $1,250,000; area and auto center pavement, $100,000; site area earthwork, $60,000, Jensen Dr. and Ea-Tex. Freeway area.

▲ **Va., Norfolk**—MOTOR HOTEL AND PARKING—Lafayette Motor Hotel, Inc., 4257 Granby, plans by W. G. Bursnall, 913 W. 21, 4 story, 282 x 54 ft., steel, stone-stucco walls, motor hotel and parking, Granby St., $1,250,000. James Hart, 4500 Colley Ave., E. B. Small, 2005 Lake Ave., consult. engrs.

▲ **Va., Vienna**—APARTMENT—Fred Schnider, 701 North Wayne St., Arlington, plans by Mills, Petticord & Mills, 3308 14th St. N. W., Wash., D. C., twelve 10 story apartments Tyson's Corner $20,000,000.

▲ **Wis., Milwaukee** — MOTEL, etc. — Sampson's Enterprises, Inc., 6845 N. Barnett Lane, motel, bowling alley, cabana club, etc. $3,600,000. Constr. in 1959.

▲ **Ont., Bradford**—HOUSING, etc.—Northview Constr. Co., Ltd., 35 Crockford Blvd., Scarborough, Toronto, plans by George A. Robb, 344A Palmerston Blvd., Toronto, 1,000 unit housing, shopping center, wading and swimming pools, marina, 80 acre park, south of Lake Simcoe near here. $6,500,000.

▲ **Ont., Toronto**—RECREATION CENTRE—Italian Gardens c/o C. D. Milani, 4967 A Yonge St., plans by William Saccoccio, 2454 Kingston Rd., recreation centre, incl. motel, swimming pool, open air theatre, Finch Ave. W. and Islington Ave. $1,000,000.

INDUSTRIAL BUILDINGS

▲ **Calif., Los Angeles** — MANUFACTURING — North American Aviation, Inc., 1700 E. Imperial Hy., El Segundo, addn. to and alter 3 mfg. bldgs. at Los Angeles International Airport. $1,500,000. Bechtel Corp., 4620 Seville Ave., Vernon, consult. engrs.

▲ **Calif., Pittsburg**—PLANT—Continental Can Co., Russ Bldg., San Francisco, 125,000 sq. ft. Metal Lithograph Plant, Loveridge Rd. $2,500,000.

▲ **Colo., Denver**—PLANT—Great Western Aggregates, Inc., Boston Bldg., Subsidiary of Ideal Cement Co., lightweight aggregate plant, 1 kiln operation annual 300,000 cu. yd. idealite. $3,000,000. Stearns-Rogers Mfg. Co., 660 Bannock St., consult. engr.

▲ **Ind., Muncie**—TRANSFORMER PLANT, etc.—Westinghouse Electric Corp., 3 Gateway Center, Pittsburgh, Pa., plans by Ebasco Services, Inc., consult. engr.-archt., 2 Rector St., New York, N. Y., 700,000 sq. ft. transformer plant, office, railroad siding. To go ahead in January.

▲ **Minn., Bloomington (P.O. Minneapolis)** — PARTS DEPOT—Deere & Co., 1325 Third Ave., Moline, Ill., John Deere Co., 800 Washington Ave. N., Minneapolis, Minn., 300,000 sq. ft. parts depot, 94th St. between Fremont and Penn Aves. South. $1,750,000. Constr. 1960. CD 2/27/57.

▲ **Mo., Creve Coeur**—RESEARCH CENTER—Monsanto Chemical Co., 800 North Lindbergh Blvd., plans by Holabird & Root, 180 N. Wabash Ave., Chicago, Ill., research center, laboratories, library, Warson Rd., Olive Street Rd.

▲ **Mont., Trident** — PLANT STORAGE FACILITIES—Ideal Cement Co., Denver National Bldg., Denver, Colo., plant storage facilities. $2,000,000. CD 6/6/55.

▲ **Neb., Superior**—PLANT STORAGE and PACKING FACILITIES—Ideal Cement Co., Denver National Bldg., Denver, Colo., plant storage and packing facilities, $2,000,000. CD 6/1/55.

▲ **N. J., Fieldsboro** — CITRIC ACID PLANT — Bzura Chemical Co., Clark St. and Broadway, Keyport, citric acid mfg. plant, Bordentown Rd. $3,000,000.

▲ **N. J., Moorestown**—PLANT ADMINISTRATION—Radio Corp. of America, front and Cooper Sts., Camden, 3 story, 100,000 sq. ft. plant administration bldg., $1,000,000. CD 1/20/55.

▲ **N. M., Albuquerque** — PLANT — Ideal Cement Co., Denver National Bldg., Denver, Colo., plant addn., Tijeras. $7,000,000. CD 5/15/57.

▲ **O., Chillicothe**—RESEARCH CENTER—Mead Corp., 118 W. First St., Dayton, research center addn. $1,400,000. Lorenz & Williams, 2600 Far Hills Ave., Dayton, archts.

▲ **O., Hudson**—WAREHOUSE, etc.—Euclid Div., General Motors Corp., Hudson, 335,000 sq. ft. warehouse and parts office adjacent to plant. $3,000,000.

▲ **Pa., Pittsburgh**—LABORATORY—Pittsburgh Testing Laboratory, 1330 Locust St., Pittsburgh, plans by Hunting, Larsen & Dunnells, archt.,-consult. engr., Century Blvd., Pittsburgh, 3-story, aluminum, brick headquarters and laboratory, Poplar Ave., Green Tree. $1,000,000.

▲ **S. C., Carlisle**—PLANT—Carlisle Finishing Co., plant addn., $1,000,000.

▲ **Utah, Devils Slide**—PLANT STORAGE FACILITIES—Ideal Cement Co., Denver National Bldg., Denver, Colo., plant storage facilities. $2,000,000.

UNCLASSIFIED

▲ **Ill., Chicago**—DOCKS AND PIERS—City, City Hall, bond election Nov. 3, docks and piers, incl. transit shed addn. at Navy Pier. $6,000,000. CD 9/10/57.

▲ **Ill., Chicago**—LIGHTING—City, City Hall, bond election Nov. 3, street lighting. $25,000,000. Lloyd M. Johnson, city engr. CD 12/23.

▲ **Ky., Covington**—SPORTS and COMMUNITY CENTER—City, City Hall, plans by Betz & Bankemper, Scott St., sports and community center, north of 12th St. $1,000,000. Hixon Tarter & Assoc., 2306 Park, Cincinnati, O., consult. engrs. CD 5/7/58.

▲ **Ky., Henderson** — YACHT BASIN, etc. — Tri-State Yacht Club, 427 Diamond Ave., Evansville, Ind., yacht basin, clubhouse, swimming pool, parking area, boat storage, 325 acres north Audabon Park, Ohio River. $1,000,000. Albert Khotz, 105 S.E. 3rd St., Evansville, Ind., consult. engr.

▲ **Md., Baltimore**—WAREHOUSE, etc.—Maryland Port Auth., Pier 2, Pratt St., Zone 2, warehouse and double car slip, float bridge, McComas St. Terminal W.M. RR. $1,300,000. F. Lester Simon, Mercantile Trust Bldg., Baltimore, Zone 12, engr. on dual car slip-float. CD 5/20.

▲ **O., Toledo**—GRAIN ELEVATOR—Toledo-Lucas Co. Port Authority, 241 Superior, 3,000,000 bu. cap. grain elevator, Middleground, Continental Grain Co., Buffalo, N. Y., lessee, $4,800,000. Parsons, Brinckerhoff, Hall & Macdonald, 51 Broadway, New York, N. Y., consult. engrs. Constr. in Nov.

From coast to coast, owners report *"more work done"* with Michigan Scrapers

CALIFORNIA

U. S. Borax & Chemical Corp, digging out largest known deposit of sodium borate in world, gets BIG production from team of 29 yd Model 310 Michigan Scraper and 600 hp Model 480 Michigan Dozer. Payloads weigh out at 26 yds—3 yds more than biggest track-type pushers could load previously.

TEXAS

T. R. Vardeman & Son Construction Co, digging lake for City of San Augustine, posts good production average with their Model 210 Michigan Scraper. On 2,400 ft cycles, 19-yd rig moves 15 loads per hour.

KENTUCKY

Holloway & Sons Construction Co, building quarry-to-river dock access road, loads Model 110 Michigan Scrapers with small (85 hp) pusher, yet gets 8¾ pay yds, scale-weighed, per trip. For added versatility, the 10½ yd pans interchange with 13 ton Rear Dumps. Scraper is

FLORIDA

S. M. Wall Co, building a 10 mile, 120,000 yd cutoff around city of Archer, teamed two Model 210 Michigan Scrapers with a Model 280 Michigan Dozer: got 14 pay yd, 40 sec loading. Scrapers and pusher provided the efficiencies of *identical power trains:* matched speeds, easier maintenance, lower parts stocks.

NEW JERSEY

Sallcon Inc, forced by high labor costs to lay off men after each small job, then rehire for new contracts, solved critical operator training problem with Michigan Scrapers. Power-steered, power-shifted, torque converter Model 110's are "so easy to run," says owner, "new men become proficient after only a few cycles."

CONNECTICUT

Brancifort Bros, grading new shopping plaza, moved 1,400 yds per 9 hour day with their two Model 110's. Like all Michigans, units are fully hydraulic; only cable is short length, yoke to apron.

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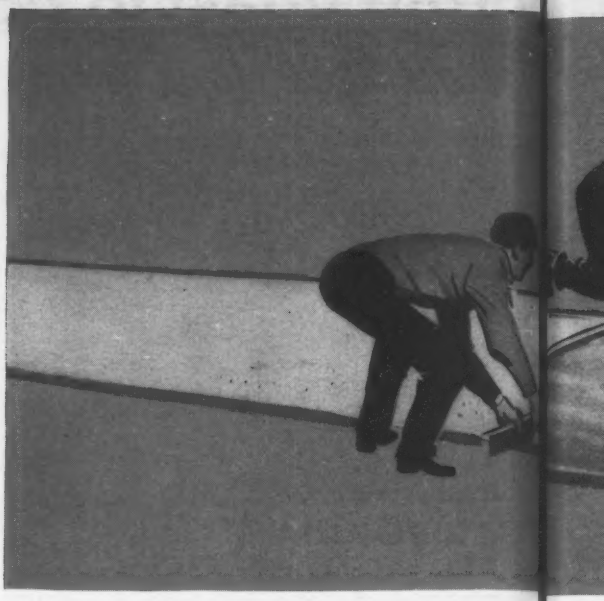

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F. N. Burt Co., Inc. Buffalo, N. Y.
Architect: H. E. Plumer and Associates, Buffalo, N. Y.

Bradley-Sun Div. of American Can Co.
Washington, N. J.
Architect: American Can Company Engineering Dept.

Behr-Manning Co., Troy, N. Y.
Architect: The Tuttle Co., Boston, Mass.

Martin Co., Orlando, Florida.
Architects: Connell, Pierce, Garland and Friedman, Miami, Florida.

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NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
October 10 Vermont

HEAVY CONSTRUCTION—LB & CA

▲ **VERMONT**—State Hy. Dpt., State Office Bldg., Montpelier. Bids opened 9/11,
The Lane Constr. Corp., 965 East Main St., Meriden, Conn., LB $1,570,599, est. $1,500,000, sub-base with bit. c. conc. surf. course, incl. three 3 span composite WF beam bridges one 5 span composite WF beam bridge town of Putney, the Brattleboro-Bellows Falls Rd. Int. Rte. 91., beginning approx. 0.277 mi. northerly of Dummerston-Putney Town line and exten. northerly 1.702 mi. Proj. 1-91-1 (1) Contr. 1. Putney. CD 8/12.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston. Bids opened 9/15,
Campanella & Cardi Constr. Co., 780 Jefferson Blvd., Warwick, R. I., LB $1,047,581, est. $1,215,891, hy. and bridge, Section 3, Interstate Rte. 495.1-95-1 (6) 3, Attleboro. CD 9/1.

BUILDINGS—LB & CA

▲ **Davison Constr. Co., Inc.**, 1306 W. Elm St., Manchester, N. H., CA $2,267,123, HIGH SCHOOL, South Porter St. and Weston Rd., MANCHESTER, N. H. City, 88 Lowell St., Manchester, N. H. Bids Sept. 3. CD 9/9, under LB.

▲ **Chicks Constr. Co., Inc.**, Sterling St., Lancaster, Mass., LB $1,353,335, North Middlesex REGIONAL HIGH SCHOOL, Rte. 119, TOWNSEND, MASS. Towns of Townsend and Pepperell, Regional School Comn., Townsend, Mass. Bids Sept. 4. CD 8/28.

▲ **Otto F. Lippolt**, George Washington Highway, Ridgefield, Conn., Owner Builds, $3,000,000, 300 HOUSES, Ned's Mountain Dist., Ridgebury, RIDGEFIELD, CONN.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
October 15 New York
STREETS AND ROADS
October 14 New York October 7 New Jersey

BUILDINGS—BA

▲ **Pa., Williamsport**—NURSES HOME—BA 10/8—Williamsport Hospital Assn., 777 Rural Ave., 4 story, bsmnt. brick, concrete block and steel nurses home and 2 story, bsmnt. wing. $1,250,000. Plans deposit $50. Lawrie & Green, 321 N. Front St., Harrisburg, archts. Edgar T. Clapp, 321 N. Front St., Harrisburg, engr. CD 7/21.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW YORK**—State Dpt. P. Wks., State Office Bldg., Albany,
cancelled bids to have been opened Sept. 10, b. conc. Type 1A, 50.3 mi. misc. work 0.04 mi. 2 hy. seps. comp. WF beams, 3 span 166.5 ft. and 3 sp. 167.6 ft. 1 RR sep. comp.-I-beam twin 2 sp. 160 ft. each, 1 bridge deck girder cant. type twin 5 sp. 710 ft. each, Massena-Helena Pt. 1, SH 1861 and Raquett River-Hogansburg, Pt. 2, St. Regis Indian Reservation, Fort Covington, Pt. 1, SH 8396 Rte. 37, FARC 59-100. Proj. F-580(15) Franklin and St. Lawrence Counties, $5,245,000. CD 9/11; b. conc. Type 2A, 0.09 mi. misc. work 0.05 mi. City of Olean, East-West Arterial Hy. (East State St., Union St. to Barry St.), FAC 59-12. Proj. U-141(6), Cattaraugus Co., $66,000.

▲ **Hendrickson Bros., Inc.**, 63 No. Central Ave., Valley Stream, N. Y., LB $3,283,550, (3 bidders), Contr. No. 1002-1-IN-TL, Sewage Disposal Dist. No. 1, trunk sewers, Sewage Collection Dist. No. 1, Inwood lateral sewers, Inwood and vicinity, Town of Hempstead, MINEOLA, N. Y. Bd. Supervs. Nassau Co., Old County Court House, Mineola, N. Y. Bids Sept. 15. CD 9/3.

▲† **Arden Eng. Co., Inc.**, 60 Taylor Dr., East Providence, R. I., LB $2,479,621, (7 bidders), Central Heating and power plant and heat distr. lines, Ernest Harmon Air Force Base, ENG-30-347-59-3B, STEPHENVILLE, NEWFOUNDLAND. U. S. Eng., 346 Broadway, New York 13, N. Y., U. S. A. Bids Sept. 10. CD 8/24.

▲ **Nissley Constr. Co.**, Landisville, Pa., CA $3,099,060, Section IG Jones Falls Expressway, BALTIMORE, MD. City, Bureau of Hys., Expressway Div., 303 Municipal Bldg., Baltimore 2, Md. Bids July 29. CD 7/31, under LB.

BUILDINGS—LB & CA

▲ **Joseph P. Blitz, Inc.**, 545 Madison Ave., New York 22, N. Y., LB $7,927,000, (12 bidders), general contract (A) Martin Van Buren HOUSES (Proj. No. NYC-30), Trinity Ave. E. 161 St., E. 163rd St.; (B) Forest South HOUSES (Proj. No. NY-5-31), Tinton Ave., E. 161 St., E. 163rd St. Bronx Boro, NEW YORK, N. Y. New York City Housing Auth., 299 Broadway, New York 7, N. Y., Bids Sept. 15, CD 8/10,

Heating Maintenance Corp., 220 E. 138th St., New York 51, N. Y., LB **$674,000**, (8 bidders), heating, Martin Van Buren Houses and Forest South Houses (New York, N. Y.),
John G. Heilman Co., Inc., 507 E. 76th St., New York 21, N. Y., LB **$575,424**, (16 bidders), electrical work Martin Van Buren Houses and Forest South Houses (New York, N. Y.),
Far Plumbing Co., 2018 Crotona Parkway, New York 60, N. Y. LB **$599,000**, (11 bidders), plumbing Forest South Houses only, (New York, N. Y.).

▲ **Willowbrook Shores Homes**, c/o Karl Bloch, archt., 7 Landsdown Ave., Merrick, N. Y., Owner Builds, **$1,500,000**, 55 HOUSES, Knight St. east of Waukeena Ave., OCEANSIDE, N. Y.

▲ **Bossert Houses, Inc.**, Box 107, Bordentown, N. J. Owner Builds, **$7,500,000**, 400 HOUSES, Georgetown Rd., BORDENTOWN, N. J. Dante D'Anastasio, 1815 Federal St., Camden, N. J., archt.

▲ **J. M. Realty Corp.**, 1 Ridge Rd., Lyndhurst, N. J. Owner Builds, **$1,400,000**, 52 HOUSES, Teak Rd., DUMONT, N. J. Percy Simon, 555 Cedar Lane, Teaneck, N. J., archt.

▲ **Wigston Abbott Corp.**, 1225 South Ave., Plainfield, N. J., CA **$2,000,000** design and construct 200,000 sq. ft. DIE CASTING PLANT, EDISON, N. J., Aluminum Corp of America, 230 Park Ave., New York 17, N. Y. CD 6/20/56.

▲ **Magnus International, Inc.**, 1604 Walnut St., Phila., Pa., CA **$1,000,000**, 15 unit MOTEL and ice skating rink, Route 130, LEVITTOWN, N. J. Phillip S. & Nathan R. Seltzer, Western Savings Fund Bldg., Phila., Pa. Henry S. Berg, 1411 Walnut St., Phila., Pa., archt.

▲ **Turner Constr. Co.**, 150 E. 42nd St., New York, N. Y., CA, 200,000 sq. ft. DENTAL MEDICINE and BIOLOGICAL RESEARCH LABORATORY, NEW BRUNSWICK, N. J. Colgate-Palmolive Co., 300 Park Ave., New York, N. Y. Eggers & Higgins, 100 E. 42nd St., New York, N. Y., archts.

▲ **Leon De Matteis**, 820 Elmont Rd., Elmont, N. Y., Owner Builds, **$3,000,000**, 16 story, 300 unit APARTMENTS, 4th, 8th, Central and West Sts., UNION CITY, N. J. S. J. Kessler, 551 Fifth Ave., New York, N. Y., archt.

▲ **Wolfinger Constr. Co.**, 1903 Fair Lawn Ave., Fair Lawn, N. J., Owner Builds, **$1,000,000**, 48 addnl. HOUSES, Alps Rd., Alps Village, WAYNE, N. J. Conger Assocs., 6 Plaza Rd., Fair Lawn, N. J., engrs.

▲ **Hughes Foulkrod Co.**, 1504 Race St., Phila., Pa., CA **$10,000,000**, LABORATORY, OFFICE, parking area, Tinicum Twp., ESSINGTON, PA. Scott Paper Co., Front and Market Sts., Chester, Pa. CD 5/22.

▲† **Norair Engineering Corp.**, 1118-22nd St. N.W., Wash., D. C., CA **$6,450,000**, Base Bid, OFFICE BLDG., National Institutes of Health, BETHESDA, MD. General Services Admin., 7th and D Sts. S.W., Wash., D. C. Bids Aug. 6. CD 8/10, under LB.

▲ **George Hyman Constr. Co.**, 1010 Vermont Ave. N. W., Wash., D. C., LB **$1,568,000**, (9 bidders) HOSPITAL WING, BETHESDA, MD. The Suburban Hospital Assoc., Inc., 8600 Old Georgetown Rd., Bethesda, Md. Bids Sept. 15. CD 9/2.

▲† **Norair Engineering Corp.**, 118 22 St. N. W., Wash., D. C., CA **$23,738,680**, MUSEUM OF HISTORY and TECHNOLOGY, Smithsonian Institution, WASH., D. C. General Services Admin., 7th and D Sts. S. W., Wash., D. C. Bids Aug. 18. CD 8/20, under LB.

▲ **S & S Builders, Inc.**, Brandywine Springs Manor, Faulkland Rd., Wilmington, Del., Separate Contracts, $2,000,000, RESIDENTIAL DEVELOPMENT (162), Faulkland Rd., etc., WILMINGTON, DEL.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
October 2 Kentucky

▲† **Florida**—BA About 11/3—U. S. Eng., P. O. Box 4970, Jacksonville, Zone 1, imprv. Canal 41, Sect. 2, Harney Pond Canal, Central and Southern Florida Flood Control Project, CIVENG-08-123-60-11. CD 9/22/58.

HEAVY CONSTRUCTION—LB & CA

▲ **NORTH CAROLINA**—State Hy. Dpt., Raleigh, N. C.—**Wilson Constr. Co., Inc.**, Box 603, Salisbury, N. C., CA **$1,064,795**, grading and structures 0.875 mi. Winston-Salem North South Expressway from Diggs Blvd. to 3rd St., Proj. 8.17375 UG-111(11) U-111 (12), Fortyth Co.;
N. C.—**Wright Contg. Co.**, Box 1537, Columbus, Ga., CA **$888,995**, SABC, 9 in. concrete pavement, lighting sys. 2.87 mi. surf. and lighting Interstate Rte. 40 from point west of S. Main St., Winston-Salem, east to point near intersection of U. S. Rtes. 158 and 421, Proj. 8.17484 I-40-3(17)194 U-401(16), Forsyth Co. Bids Aug. 25, awarded Sept. 11. CD 8/28, under LB.

BUILDINGS—LB & CA

▲ **Daniel Constr. Co. of Alabama, Inc.**, 822 7 Ave. S., Birmingham, Ala., CA **$1,500,000**, MOTOR-HOTEL, swimming pool, BIRMINGHAM, ALA. Guest House Motor Inn, Inc., 18 St. and 10 Ave. S., Birmingham, Ala. Warren, Knight & Davis, Protective Life Bldg., Birmingham, Ala., archts.

▲ **J. E. Green Constr. Co.**, Division St., Johnson City, Tenn., CA **$2,122,255**, HIGH SCHOOL, JOHNSON CITY, TENN. City Bd. Educ., Johnson City, Tenn. Bids June 18. CD 7/15, under LB.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
September 29 Illinois, Ohio

BUILDINGS—SLC

▲ **Ill., Elk Grove**—FACTORY—Sola Electric Co., 4633 W. 16th St., Cicero, soon lets contract, 1 and 2 story, 450 x 451 ft. steel concrete electric products factory, $2,000,000. A. M. Kinney Inc., 2912 Vernon Pl., Cincinnati, O., archt.

HEAVY CONSTRUCTION—LB & CA

▲ **Bethlehem Steel Co.**, Purdential Bldgs., Chicago 1, Ill., CA **$5,681,342**, Damen Ave. viaduct superstructure, 37th to 47th Sts., CHICAGO, ILL. Dpt. Purchases, City Hall, Chicago 2, Ill. Bids Aug. 14, awarded Sept. 10. CD 8/24, under LB.

▲ **James McHugh Constr. Co.**, 6449 S. Park Ave., Chicago, Ill., CA **$1,320,985**, Div. W, pump and blower house, sludge disposal bldg., Calumet Sewage Treatment Works, CHICAGO, ILL. Metropolitan Sanitary Dist., 100 E. Erie St., Chicago 11, Ill. Bids Aug. 27, awarded Sept. 9. CD 9/2, under LB.

▲ **William E. Schweitzer & Co.**, 2207 Dodge Ave., Evanston, Ill., LB **$4,645,000**, est. $5,000,000, (11 bidders), 2 story, 200 x 415 ft., rein.-con steel hangar, dormitory, office, Chicago O'Hare International Airport, Spec. 80.85-59-106, Park Ridge, CHICAGO, ILL. Dpt. Purchases, City Hall, Chicago 2, Ill. Bids Sept. 9. CD 9/2.

▲ **MICHIGAN**—State Hy. Dpt., Mason Bldg., Lansing, Mich.—**Charles Nurrie Co.**, 1342 Portage St., Kalamazoo, Mich. and **Armond Cassili, Inc.**, 17738 Mack Ave., Detroit, Mich., CA **$527,023**, relocation Pennsylvania R.R. tracks 2.6 mi. for Grand Rapids Expressway, Grand Rapids, Kent Co.;
Mich.—**Pierson Contg. Co.**, 220 Eddy Bldg., Saginaw, Mich., CA **$2,283,488**, 4.8 mi. section Detroit-Chicago Expressway from eastern terminus Jackson Northbelt, Jackson Co.;
Mich.—**Raff & Dexter**, Box 9517, Lansing, Mich., CA **$915,205**, 0.3 mi. dual 36 ft. roadways and two grade separations Grand Rapids Expressway from Fulton St. north to Blumrich, Grand Rapids, Kent Co. Grand total $3,725,716. Bids Sept. 2, awarded Sept. 15. CD 9/9, under LB.

BUILDINGS—LB & CA

▲ **Koppers Engineering & Constr. Div. Koppers Co., Inc.**, Koppers Bldgs., Pittsburgh 19, Pa., CA, rebuilding No. 1 COKE OVEN BATTERY, recondition BATTERIES 2 and 3, HAMILTON, O. Armco Steel Corp., 1939 Armco Ave., Middletown, O.

▲ **Gariup Constr. Corp.**, 1900 E. 7th Ave., Gary, Ind., LB **$1,207,120**, est. $900,000 (6 bidders), HIGH SCHOOL addn., EAST GARY, IND. East Gary School Corp., 2295 Parke Ave., East Gary, Ind. Bids Sept. 8. CD 8/25.

▲ **Carl M. Geupel Constr. Co.**, 1919 N. Meridian St., Indianapolis, Ind., CA **$1,500,000**, TISSUE CULTURE LABORATORY, ZIONSVILLE, IND. Pitman Moore Co., Div. Allied Laboratories, Inc., 1200 Madison Ave., Indianapolis, Ind.

▲ **William E. Schweitzer Co.**, 2207 Dodge Ave., Evanston, Ill., CA Est. **$1,500,000**, 3 story, brick, concrete roof deck, heating sys. extens. HOME FOR INCURABLES, CHICAGO, ILL. University of Chicago, 5801 Ellis Ave., Chicago, Ill. Bids July 15. Awarded Sept. 10. CD 7/10.

▲ **Sumner Sollitt Co.**, 307 N. Michigan Ave., Chicago 1, Ill., CA **$5,887,000**, HOUSING, Proj. 2-36, CHICAGO, ILL. Chicago Housing Authority, 608 S. Dearborn St. Chicago 5, Ill. Bids Sept. 1, awarded Sept. 9. CD 9/3, under LB.

▲ **George A. Fuller Co.**, 111 W. Washington St., Chicago 2, Ill., CA **$2,000,000**, 1 and 2 story, 200,000 sq. ft., rein.-con. DEPARTMENT STORE, Milwaukee Ave. and Golf Rd. DES PLAINES, ILL. Sears Roebuck & Co., 3609 N. Arthington St., Chicago, Ill. Dunlap & Esgar, Inc., 33 N. Michigan Ave., Chicago 1, Ill., archt. Awarded Sept. 1.

MISSISSIPPI TO ROCKIES

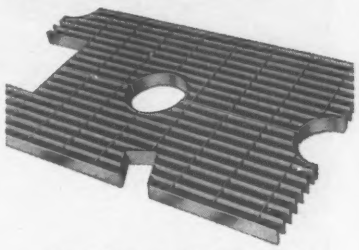
HEAVY CONSTRUCTION—LB & CA

STATE HIGHWAY LETTINGS
BRIDGES
September 30 Arkansas — October 1 Kansas
STREETS AND ROADS
September 30 Arkansas — October 1 Kansas
October 13 Minnesota

▲† **South Dakota**—BA 9/30—U. S. Eng., 1709 Jackson St., Omaha 2, Neb., furnishing 14.4 KV station type switchgear, 13.8 KV metal-clad switchgear generator neutral grounding equipment and metal enclosed isolated-phase bus structures, near Pierre, Oahe Reservoir Proj. ENG-25-066-60-11. $1,000,000-$1,500,000. CD 8/28.

(Continued on page 74)

SOLVE YOUR GRATING PUZZLE



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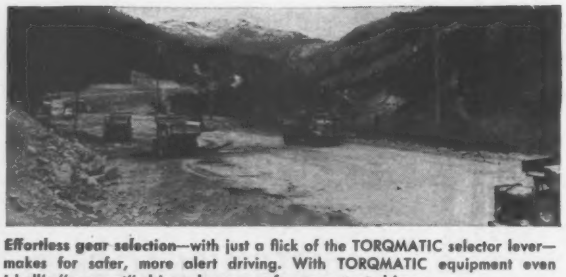


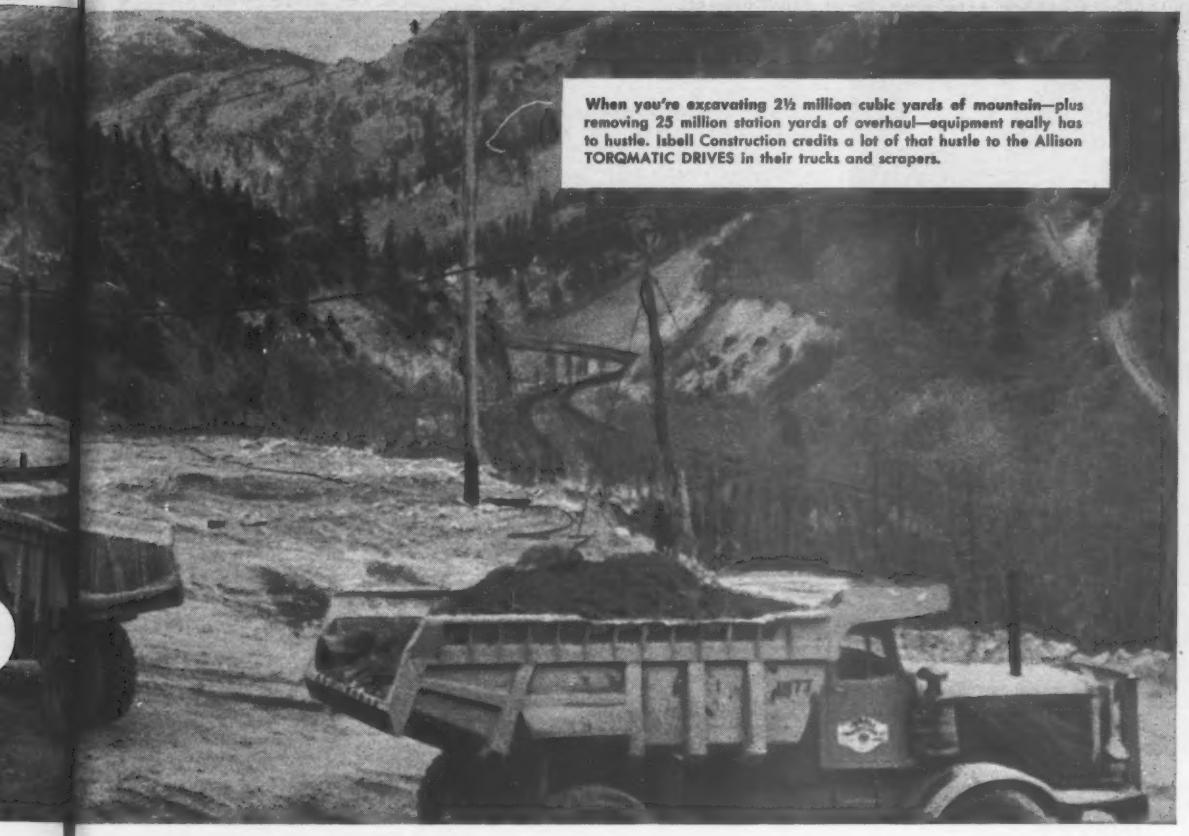
Effortless gear selection—with just a flick of the TORQMATIC selector lever—makes for safer, more alert driving. With TORQMATIC equipment even Isbell's "greenest" drivers become safe, competent drivers.

Isbell Construction Company of Reno, Nevada, has turned loose their TORQMATIC DRIVE equipment on many a big job. But none bigger — or tougher — than cutting away 2½ million yards of Sierra Nevada mountain as roadbed for the new U. S. Highway #40 link—thru route to the 1960 Winter Olympics at Squaw Valley, California.

A whole army of TORQMATIC-equipped Euclid TD trucks plus S-18 and S-24 scrapers are on the site. Their assignment: helping excavate the 6.7 miles of mountainside—

Climbing back and forth out of the "hole" is tough on any truck. But TORQMATIC equipment takes all the downgrades with practically no wear on the service brakes. A built-in TORQMATIC retarder handles most all braking except for full stops.

When you're hauling over boulder-strewn terrain like this, your truck needs all the protection it can get. Isbell Construction's "Eucs" get it from the fluid coupling in their TORQMATIC DRIVES. Result: drive-line replacements are way down—equipment availability is way up.



When you're excavating 2½ million cubic yards of mountain—plus removing 25 million station yards of overhaul—equipment really has to hustle. Isbell Construction credits a lot of that hustle to the Allison TORQMATIC DRIVES in their trucks and scrapers.

40 completed by '60 Olympic Game time

AND hauling out 25 million station-yards of overhaul that's loaded throughout with hefty granite boulders. Yet Isbell is running ahead of schedule on this mountainous job. And they give full credit to their TORQMATIC "Eucs." Even "green" drivers have rapidly become professional, thanks to foolproof TORQMATIC operation.

Phenomenally high equipment availability has been another real timesaver. Drive-line replacements have been cut back. And there've been comparable savings on service brakes—thanks to the built-in retarder.

"No matter what kind of job we're on—building airports, superhighways or even working open pit mines—we know we can count on our TORQMATIC equipment," declares President C. V. Isbell.

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(Continued from page 71)

BUILDINGS—SLC

▲ **Wyo., Atlantic City**—PLANT—Columbia-Geneva Steel (Div. U. S. Steel Corp.), 120 Montgomery, San Francisco, Calif., soon lets contract taconite ore processing plant (low grade iron ore). $16,000,000. Bechtel Corp., 105 California, San Francisco, Calif., engrs. CD 3/7/58.

HEAVY CONSTRUCTION—LB & CA

▲ **TEXAS**—State Hy. Comn., Austin, Bids opened 9/15, Tex.—**Cecil Ruby Co.**, 907 Brown Bldg., Austin, Tex., LB $2,889,230, flex. base, b. conc. 3.214 mi. Hy. IH 35, Proj. I 35-2 (18) 161 Bexar Co.;
Tex.—**Ivan Dement & Austin Bridge Co.**, P.O. Box 1787, Amarillo, Tex., LB $1,290,817, c. conc. 1.504 mi. Hy. U. S. 60 and U. S. 87; Proj. U 60 (17);
Tex.—**Maupin Constr. Co.**, P.O. Box 6476, San Antonio, Tex., LB $222,712, widen, flex. base and b. conc. 11.237 mi. Hy. St. 41 and U. S. 377, Proj. S 407 (1) & S 2395 (1), Edwards and Real Counties;
Tex.—**Ray Boswell**, P.O. Box 537, Pampa, Tex., LB $298,257, flex. base, b. conc. 6.021 mi. Hy. St. 152, Proj. S 661 (4) Gray Co.;
Tex.—**Brown & Root, Inc.**, P.O. Box 3, Houston, Tex., LB $747,126, storm sewer, cement base 0.636 mi. Hy. IH 45, Proj. I 45-1 (28) 49, Harris Co.;
Tex.—**Austin Road Co.**, Box 1590, Dallas, Tex. LB $1,063,334, c. conc. 2.529 mi. Hy. IH 45, Proj. I 45-1 (31) 99, Montgomery Co., all foregoing CD 9/3;
Tex.—**E. E. Hood & Sons**, P.O. Box 12097, San Antonio, Tex., LB $118,727, base, surf. 5.577 mi. Hy. RM 337, Proj. R 792-2-1, Real Co.;
Tex.—**James C. Kerr**, P.O. Box 5065, Lubbock, Tex. LB $140,165, reconstr. grade, structures, base, surf. 10.471 mi. Hy. F. M. 40, Proj. C 644-1-8, Lubbock Co.;
Tex.—**Ballenger Constr. Co.**, P. O. Box 943, San Benito, Tex., LB $146,215, base, b. conc. pavement, surf. 2.51 mi. Hy. FM 493, Proj. S 397 (2), Hidalgo Co.;
Tex.—**Scrivner & Richardson, Inc.**, P. O. Box 906, Aransas Pass, Tex., LB $766,867, base, surf. 10.89 mi. Hy. FM 521, and St. 288, Proj. S 267 (2) Brazoria Co.;
Tex.—**Ivan Dement, Inc.**, P. O. Box 1787, Amarillo, Tex., LB $105,691, base, surf. 6.31 mi. Hy. FM 2381, Proj. S 2392 (1), Potter Co., all foregoing. CD 8/26.

BUILDINGS—LB & CA

▲ **William H. & Nelson Cunliff Co.**, 3320 Lindell Blvd., St. Louis 3, Mo., CA Total est. over $10,000,000, 400,000 sq. ft. RESEARCH CENTER along Warson Rd. south Olive Street Rd., CREVE COEUR, MO. Monsanto Chemical Co., 800 North Lindbergh Blvd., Creve Coeur, Mo. Holabird & Root, 180 N. Wabash St., Chicago, Ill., archts. CD 9/11;
Fruin-Colnon Contg. Co., 1706 Olive St., St. Louis 3, Mo., site preparation for RESEARCH CENTER (Creve Coeur, Mo.).

▲ **C. Rallo Contg. Co., Inc.**, 5000 Kemper Ave., St. Louis 9, Mo., CA Est. $2,500,000, 2 story, ground floor T-shaped 53x239 ft, 49x164 ft, 192-room DIPLOMAT HOTEL, incl. 67½x96 ft, PUBLIC BLDG., etc. southwest corner Kingshighway and Waterman Ave., ST. LOUIS, MO. Kingsman Investment Co., 108 N. Kingshighway, St. Louis 8, Mo. Bids Aug. 25. CD 8/21.

FAR WEST

BUILDINGS—BA

▲ **Calif., Los Padres**—MEDIUM SECURITY FACILITY—BA 10/28—State Div. Architecture, 1100 S. Grand Ave., Los Angeles, new medium security facility, Phase II, State Dpt. Corrections, near here. W.O. 3721GC-19. $3,200,000. Plans deposit $250.

HEAVY CONSTRUCTION—LB & CA

▲† **Peter Kiewit Sons Co., Inc.**, 1024 Omaha National Bank Bldg., Omaha, Neb., CA $3,617,925, Section 1, relocate Union Pacific R.R., Ice Harbor Dam, Inv. 69-57, Pasco, WASHINGTON. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids Sept. 2. CD 9/8, under LB.

▲ **Yuba Mfg. Div. Yuba Consolidated Industries**, 1276 California Ave., Palo Alto, Calif., CA $5,250,000, power house and spillway facilities, Wanapum Dam on Columbia River for Grant Co. P. Utility Dist., WASHINGTON. Grant County Constructors, Ephrata, Wash. CD 7/20, under CA.

▲ **Scheumann & Johnson, Lloyd Bldg., Seattle, Wash.**, LB $1,363,267, est. $1,649,557 (8 bidders), grade separation structures W. Dravus St. and south end of Ballard bridge, wid'n. 15th Ave. W., SEATTLE, WASH. City, County-City Bldg., Seattle, Wash. Bids Sept. 9. CD 8/12.

▲ **Walsh Constr. Co.**, 2 Pine St., San Francisco, Calif., LB $6,387,880, (12 bidders), Camino Tunnel, appurtenant works, access roads, Upper American River Proj., El Dorado Co., Inv. No. 2212, SACRAMENTO, CALIF. Sacramento Municipal Utility Dist., Engineering Dpt., 1708 59th St., Sacramento, Calif. Bids Sept. 15. CD 9/11.

BUILDINGS—LB & CA

▲ **Bumstead & Woolford Co.**, 1411 4th Ave. Bldg., Seattle, Wash., CA Est. $2,000,000, PHOSPHORIC ACID PLANT, KELLOG, IDAHO. Bunker Hill Co., 1336 16th St., Oakland, Calif. Door-Oliver Inc., Barry St., Stamford, Conn.

▲ **Del E. Webb Constr. Co.**, S. 23 Ave., Phoenix, Ariz., Owner Builds, $6,500,000, RETIREMENT COMMUNITY, incl. 1,600 homes, Rte. U.S. 60-70-89, ½ mi. west of Marinette, GLENDALE, ARIZ.

▲ **Owens & Redden Constr. Co.**, Normal Ave., Tempe, Ariz., LB $1,481,368 (4 bidders), HIGH SCHOOL, 31 Ave. and Olive, Glendale, PHOENIX, ARIZ. Bd. Supervs. Maricopa Co., Courthouse, Phoenix, Ariz. Bids Sept. 14.

▲ **Cawdrey & Vemo**, 3601 Fremont Ave., Seattle, Wash., CA $2,344,525, RETIREMENT HOME, 5th and Marion Sts., SEATTLE, WASH. Seattle First Methodist Home, Inc., c/o 1st Methodist Church, 1306 2nd Ave., Seattle 4, Wash. Bids July 30. CD 8/5, under LB.

▲ **De Kolb Constr. Co., Inc.**, c/o owner, CA $1,233,358, 101 DWELLINGS, Rhoades Rd., Parkdale Ave., Beatrice St., SAN DIEGO, CALIF. Brighton Dev. Co., Inc., 3045 Rosecrans St., San Diego, Calif.

▲ **De Kolb Constr. Co., Inc.**, c/o owner, CA $1,436,270, 97 DWELLINGS, Utica Dr., Lockford Ave., Dusk Dr., SAN DIEGO, CALIF. Beverly Dev. Co., Inc., 3045 Rosecrans St., San Diego, Calif.

▲ **Guide to Housing, Inc.**, 4680 Alvarado Canyon Rd., San Diego, Calif., Owner Builds, $1,541,000, 119 DWELLINGS, Lynda Heights Tract No. 1, SAN DIEGO, CALIF.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

October 2, 8 British Columbia

STREETS AND ROADS

Sepetember 29 British Columbia October 14 Ontario

BUILDINGS—BA

▲ **Ont., Hamilton**—RESIDENCE—BA 9/29—McMaster University, Hamilton, 4 story, L-shaped women's residence. $1,300,000. Husband & Wallace, 30 Hunter St. W., archts. CD 7/20.

HEAVY CONSTRUCTION—LB & CA

▲ **Carter Constr. Co. Ltd.**, 419 Cherry St., Toronto, Ont., CA $1,369,850, (3 bidders), hydrogen generating plant and converting 21 Butler bldgs. into married quarters, FROBISHER BAY, N. W. T. Dpt. Transport, 404 Hunter Bldg., Ottawa, Ont. Awarded Aug. 27. CD 9/8, under LB.

▲ **Robert McAlpine Ltd.**, Challenge Rd., Toronto, Ont. LB $7,809,077, Section U2, Toronto Subway University Ave. extension, TORONTO, ONT. Toronto Transit Comn., 1900 Yonge St., Toronto, Ont. Bids Sept. 14. CD 9/8;
McNamara Constr. Co. Ltd., 42 Industrial St., Toronto, Ont., and **Raymond International, Inc.**, 140 Cedar St., New York, N. Y., LB $6,805,102, Section U3 subway structure, two station sections, Bloor St. section Rapid Transit Subway (Toronto, Ont.)

BUILDINGS—LB & CA

▲ **James Kemp Constr. Ltd.**, 121 Vansitmart St., Box 52 Station B, Hamilton, Ont., CA $1,511,593, SECONDARY SCHOOL, Saltfleet annexed area, HAMILTON, ONT. Hamilton Bd. Educ., 357 Hunter St. W., Hamilton, Ont. Awarded Sept. 11. CD 3/3.

▲ **W. B. Sullivan Constr. Ltd.**, 759 Warden Ave., Toronto, Ont., CA $3,338,000, (11 bidders), structural steel Cedarbrae Secondary SCHOOL, Markham Rd., TORONTO, ONT. Scarborough Bd. Educ., 2472 Eglinton Ave. E., Toronto, Ont. Bids June 22, awarded Sept. 8. CD 6/2.

▲ **E.G.M. Cape & Co.**, 1956 Ltd., 4898 Western Ave., Montreal, Que. CA Approx. $14,000,000, 17 story RAILWAY HEAD OFFICE, Mansfield, Belmont and Lagauchetiere Sts., MONTREAL, QUE. Canadian National Railways, A.V. Johnson, ch. engr. 355 McGill St., Montreal, Que. Bids Aug. 20. CD 7/23.

▲ **MacWilliam Constr. Co. Ltd.**, Swift Current, Sask. CA $1,223,200, 150 bed HOSPITAL ADDN., YORKTON, SASK. Union Hospital Bd., Yorkton, Sask. Bids Aug. 27. Awarded Sept. 10. CD 8/11.

PUERTO RICO

BUILDINGS—LB & CA

▲ **Henly & Beckwith**, 2628 Pearl St., Jacksonville, Fla., U.S.A., LB $1,448,103, (3 bidders), 3 story HOSPITAL, 1 story rein.-con. PSYCHIATRIC UNIT, SAN GERMAN, PUERTO RICO. Hospital de la Concepcion, San German, Puerto Rico. Joaquin Rodriguez Benitez, 800 Labra St., San Juan, Puerto Rico, archt.

▲ **Rexach Constr. Co.**, P.O. Box 8175, San Juan, Puerto Rico, Owner Bulids, $1,600,000, 15 story, 40-unit APARTMENT, SAN JUAN, PUERTO RICO.

FOREIGN

HEAVY CONSTRUCTION—LB & CA

▲ **Taylor Woodrow (Nigeria)**, c/o Taylor Woodrow Ltd., 10 Park St., London W1, England, CA Est. $6,300,000, bridge over Niger River, NIGERIA. Govt. of Nigeria, Lagos, Nigeria. CD 6/9/58.

▲ **Dorman Long (Bridge & Engineering) Ltd.**, Zetland Rd., Middlesborough, Yorkshire, England, CA Est. $2,000,000, 50,000 tons steel for bridges, SAIGON, VIETNAM. Govt. Vietnam, Saigon, Vietnam.

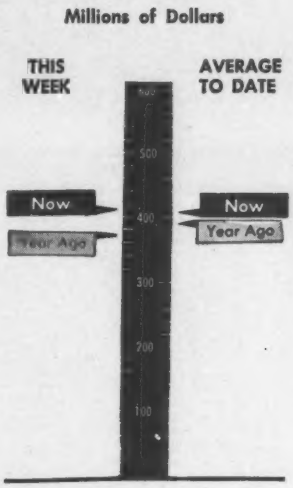
BUILDINGS—LB & CA

▲ **John Brown, Ltd.**, 8 Sanctuary S. W. 1, London, England, CA Est. $7,000,000, BEET PROCESSING PLANT, KAVAR, IRAN. Herkat Shami Ghande Pars Co., Kavar, Iran.

(Proposal Advertisements see p. 86 to 89)

Construction Scoreboard

CONTRACTS ...



AMOUNT OF CONTRACTS LET

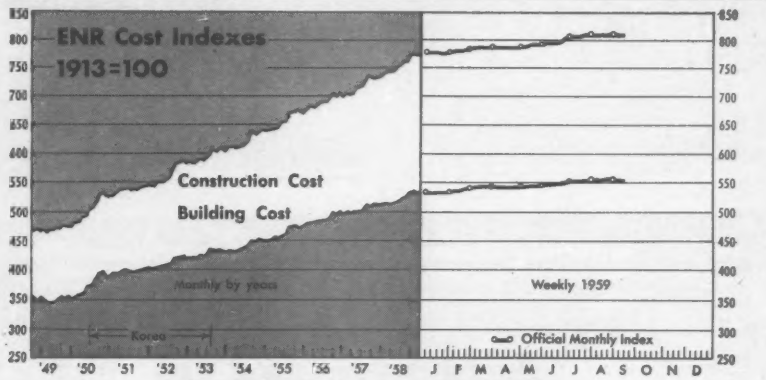
	This Week millions	Cum. 39 wks 1959 millions	Chge '58-'59 %
All Heavy Constr.	**$410.7**	**$15,863.2**	**+ 5**
By Ownership			
PRIVATE	226.8	7,934.3	+30
PUBLIC	183.9	7,928.9	−11
State & Municipal	121.7	5,736.3	−12
Federal	62.2	2,192.6	− 8
By Type of Work			
PUBLIC			
Waterworks	4.4	312.2	+27
Sewerage	10.0	497.9	+ 7
Bridges*	11.1	579.8	+ 7
Highways	31.3	2,311.2	−15
Earthworks, Dams & Waterways	27.0	701.0	−15
Buildings:			
Excl. Housing	64.4	1,994.8	− 2
Housing	10.1	489.5	−49
Unclassified	25.7	1,050.5	− 9
PRIVATE			
Buildings:			
Mass Housing	97.2	3,562.9	+20
Commercial	17.4	1,698.5	+18
Industrial	108.6	2,275.7	+66
Unclassified	3.5	389.2	+15

*Includes private bridges

NOTE: Minimum size projects included are: Waterworks and waterways, $53,000; other public works, $88,000; industrial buildings, $110,000; other buildings, $400,000.

CAPITAL . . .

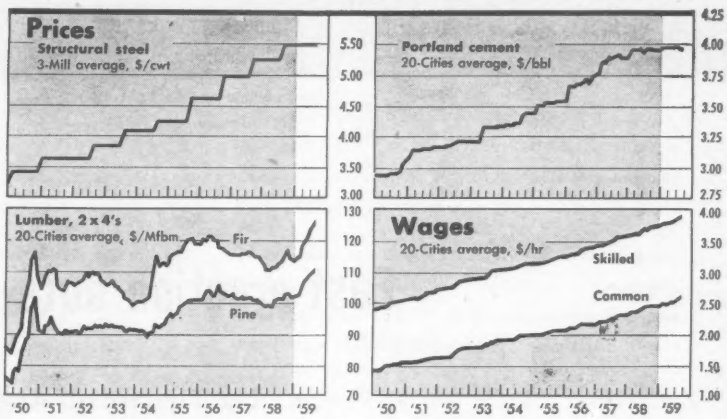
New Capital For Construction	Week of Sept. 17 millions	Cum. 38 wks 1959 millions	Chge '58-'59 %
Corporate Securities	$ 56.7	$2,688.7	−35
State and Municipal:			
All Except Housing	80.2	4,518.5	− 4
Housing	....	75.2	−14
Federal Loans	9.0	108.0	−24
Federal Aid	....	3,107.2	+20
Total Nonfederal	$145.8	$10,497.6	−10
Federal Appropriations:			
Projects in U. S.	$1,909.6	$3,135.9	−26
Outside U. S.	.....	4.4	−81
Total New Capital	$2,055.4	$13,637.8	−14


ENR Cost Indexes
1913=100
Construction Cost
Building Cost
Monthly by years
Weekly 1959
Official Monthly Index
Korea
'49 '50 '51 '52 '53 '54 '55 '56 '57 '58 J F M A M J J A S O N D

CURRENT COST INDEXES

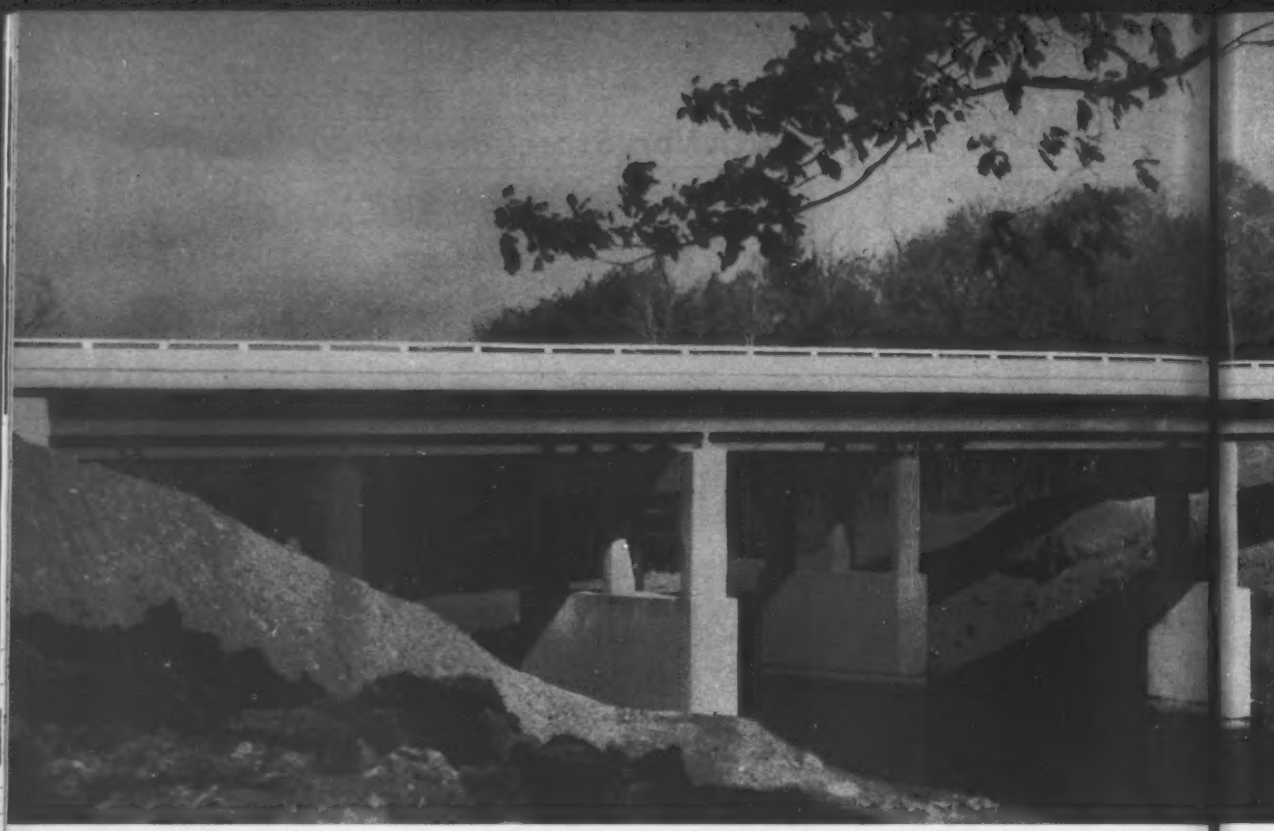
ENR INDEXES (1913=100), 20 cities' average	Week of Sept. 17 1959	% Change from Aug. 20 1959	% Change from Sept. 18 1958
Construction Cost	812.06	−0.02	+4.70
Building Cost	555.65	−0.06	+3.60

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850.
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.



ENR COST INDEXES IN 22 CITIES, 1913=100

City	Construction Cost Sept 1959	Construction Cost Percent Change from last Month	Construction Cost Percent Change from last Year	Building Cost Sept 1959	Building Cost Percent Change from last Month	Building Cost Percent Change from last Year
Atlanta	624	0	+6.2	497	0	+5.3
Baltimore	745	+0.5	+5.2	553	+0.7	+3.6
Birmingham	652	+3.2	+8.8	513	+1.0	+5.1
Boston	836	+0.5	+3.3	566	+0.5	+3.5
Chicago	923	−0.4	+7.7	586	−0.5	+4.6
Cincinnati	818	0	+4.9	540	+0.7	+4.0
Cleveland	925	+0.4	+5.8	558	+0.7	+5.9
Dallas	604	0	+5.4	490	0	+4.5
Denver	742	0	+1.5	540	0	+1.9
Detroit	962	0	+8.2	599	0	+4.5
Kansas City	803	0	+4.6	558	0	+4.7
Los Angeles	877	−0.2	+6.7	560	+0.5	+6.3
Minneapolis	860	0	+4.2	569	0	+2.7
New Orleans	635	0	+5.5	508	0	+4.7
New York	1016	0	+6.0	652	+0.8	+4.8
Philadelphia	795	0	−1.0	582	0	+0.2
Pittsburgh	858	+0.7	+3.7	610	+1.5	+2.9
St. Louis	880	−0.6	+3.7	579	−0.9	+2.1
San Francisco	858	−0.2	+4.6	551	+0.2	+3.4
Seattle	839	+0.4	+5.0	508	+0.6	+5.0
U. S.—20 Cities' average	813	+0.2	+5.2	556	+0.4	+3.9
Montreal	620	0	+2.8	457	0	+1.8
Toronto	666	+0.3	+8.1	495	0	+5.5



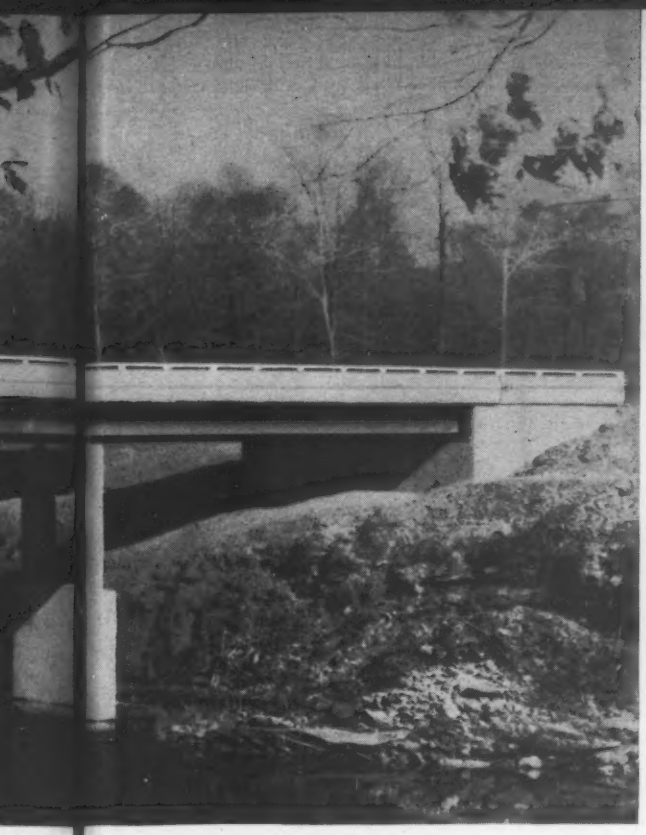
Steel bridge on Ohio Turnpike over Rocky River—designed by Tippetts-Abbett-McCarthy-Stratton.

Fast erection puts steel in the designs of s

by Tippetts-Abbett-McCarthy-Stratton, Con

Short-span bridge on New York Thruway, designed in steel for quick erection.

Beautiful Bridge Award for 1955 won by Tippetts-Abbett-McCarthy-Stratton for the Welfare Island Bridge over the East River in New York City —one of two awards they won for steel bridges.



Stratton,

gns of short-span bridges

ton, Consulting Engineers

rection.
Stratton
ork City
ridges.

Among a great variety of projects in Civil and Structural Engineering, many short-span steel bridges are designed each year by the firm of Tippetts-Abbett-McCarthy-Stratton, Consulting Engineers, New York City. This organization is one of the most active and widespread consulting engineering firms in the world.

They are presently involved in a number of Federal and State Highway Projects. The topographical conditions and rapidity of erection often make it more practical to use steel.

Steel saves time. Steel is a proven material for bridges. Work crews know how to handle it. Rapid construction is a factor in early completion of highway projects.

Steel spans are attractive. This is shown by the fact that two A.I.S.C. Awards for beautiful bridges were won on steel structures designed by Tippetts-Abbett-McCarthy-Stratton.

Steel is readily available. Because of the many advantages of steel bridge construction, U. S. Steel has greatly expanded its facilities to manufacture structural shapes and plates. And new, tougher high strength and alloy steels provide greater strength with less bulk. You can confidently design in steel—the material you know best, the material that offers most—knowing it will be available. *USS is a registered trademark*

United States Steel Corporation—Pittsburgh
Columbia-Geneva Steel—San Francisco
Tennessee Coal & Iron—Fairfield, Alabama
United States Steel Supply—Steel Service Centers
United States Steel Export Company

United States Steel

USS

Local construction bonds sell best when these men are used...

1. ENGINEER

His training and reputation will help convince investors that the planned improvement will earn enough to pay debt service.

2. BOND ATTORNEY

His advice will keep a government body clear of legal pitfalls and court actions that can block or delay a planned public improvement.

3. FINANCIAL ADVISOR

His knowledge will help assure a quick sale of construction bonds at the best time and at the most favorable interest rate.

Result . . .

More Money for Public Works

Contractors and engineers have a direct monetary interest in how a community prepares to sell bonds that will finance public works construction.

Failure of a community to work out the legal, engineering and financial details carefully, can, over the short term, prevent the start of a project, delay it, or increase the cost to the community through higher interest charges.

The long-term ramifications of such omissions are even more serious, both to the community and the area's construction industry. Contractors will face the possibility of a severely restricted public construction market over a period of years. The community could see its economic growth stunted, perhaps halted, because of inability to pay for public facilities needed to serve new industry, commerce and a growing population.

The demand for funds is now outstripping the supply, with the federal government the most voracious borrower. That's why lenders can afford to accept only the best credit risks, rejecting those who fail to meet the sophisticated tests of the money market.

Today, communities must buy sophistication by hiring these men:

- Consulting engineers.
- Municipal bond attorneys.
- Municipal finance consultants.

Moreover, the institutional investors—insurance companies, banks, pension funds—demand that each of these specialists have a nationally recognized reputation. They won't buy an unknown quantity.

The specialized talents are an added initial expense, but the national stature of all involved will save money in the long run. And advice from the financial consultant to withhold a bond offering during a given period or reject the purchase bids of financial underwriters can save dollars immediately and for years in the future.

New York State demonstrated the value of specialized ability this year, although in its case, the advice came from within its own agencies.

In mid-May, the New York State Thruway Authority offered $50 million worth of general revenue bonds. Best bid set a net interest cost of 4.3029%. The bid was rejected as "too high" by New York State Comptroller Arthur Levitt.

Three months later, the issue was offered again. The lowest bid set a net interest cost of 4.1996%, and the bid was accepted.

The saving between the first offering and the second offering over the life of the bonds is estimated at $2.7 million.

Despite the specialization that now marks the national economy, most small- and medium-size communities try to cut costs by doing without experts to prepare and sell a bond issue.

"They are penny-wise and pound foolish," says L. C. Peterman of Ford, Bacon & Davis, Inc., New York City management and consulting engineering firm. "Municipal borrowing is not a do-it-yourself operation. It's one that requires highly specialized and talented guidance from start to finish," Mr. Peterman says.

His assertion is supported by figures. From January 1 through September 17, state and local governments sold bond issues for new construction amounting $4.6 billion, according to ENR figures (see table, p. 81).

And the total for all of last year was $6.4 billion. That total represents nearly 7,000 individual bond issues—all competing with the consumer, home buyer, corporations and utilities, and the federal government.

Greatest and most extensive independent help is required when a community decides to sell revenue bonds. Those debt issues must be retired and their interest paid from earnings of the facility that is to be provided.

That is in contrast to the general obligation bond. Such obligations are backed by the full faith and credit of the state or locality and agreement to place general taxes on all taxable property within the boundaries of the borrower.

Generally, most of the problems involving a general obligation bond can be solved by public officials with the advice of a local investment banker or bond dealer.

The official statement of the community describing the general obligation should contain the following information for the investors:

- Extent of taxing power.
- Assessed valuations and tax rates.
- History of percentage of tax collection.
- Enforcement of tax collections.
- Local budget.
- Outstanding debt.
- Description of the area; population record, industries, labor supply and all other pertinent local economic indexes.

Issuance of a revenue bond is a more complicated operation.

"A community has to start from

USED BY MEN WHO BUY EQUIPMENT FOR WHAT IT SAVES

Cost-Cutting Way to Clear Land

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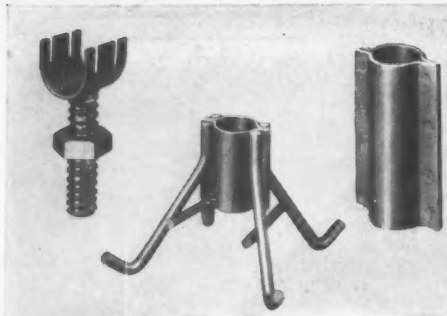
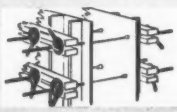


HEAVY-DUTY SCREED SUPPORTS

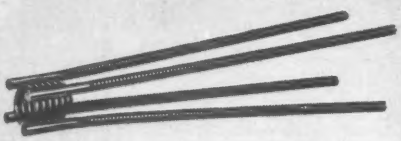
THREADED COIL TIES

Engineering Structures

TILT LOCK CLAMPS



Heavy-Duty Forming



4-STRUT COIL ROD ANCHORS

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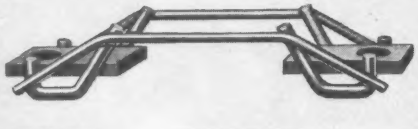

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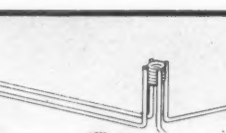
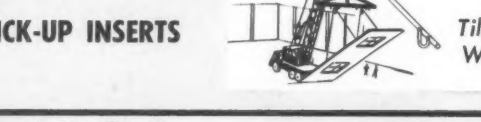
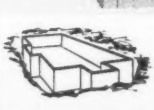


Tilt-Up Work



SNAP TIES



Ordinary Foundations

scratch when a facility is to be financed by revenue bonds," says J. Basil Ramsey of Wainwright & Ramsey, Inc. This company is an independent financial consulting firm, neither bidding on issues nor selling them. It advises, prepares and distributes official statements for the government body.

After the community has determined the need for the facility, the city engineer can determine the feasibility of the project on a cost base.

After this rough study, the use of local talent usually comes to an end, according to Mr. Ramsey.

The consulting engineer, usually a specialist in the field of work involved, and the independent bond attorney then take the floor. National reputation is a must.

"The problems involved in investing money are sufficient enough to keep in the institutional investor busy without having to check on the abilities of a local engineer and local attorney. Local talent may be competent, but unfortunately, investors want that determined by years of past performance, not individual investigation of a new name," Mr. Ramsey says.

Preparation of earnings projections is an engineering function, but they are not ordinarily recognized as authoritative unless performed by an engineer having no association with the issuers.

The same is true of bond attorneys. Their specialized training covers a broad field not ordinarily the province of a local legal counsel.

The bond attorney determines the municipality's legal right to borrow money, its repayment obligations, right to operate the project, establishment of sinking and reserve funds, maximum permissible period of indebtedness, maximum allowable interest rates and bid prices and redemption provisions.

He also is familiar with the small details that sometimes are the most frequent troublemakers for a community that fails to obtain outside consultants.

Ford, Bacon & Davis' Mr. Peterman tells of a community that was tripped by a quirk of the calendar.

It successfully cleared major hurdles and set a date for the sale of bonds. However, one of the requisites of local law required a 30-day waiting period between time of final approval by the city council and the sale of bonds.

Approval came on a February 15. "Fine, we'll sell the bonds on March 15," said the mayor. They did, only to run into a court suit. The law had been violated, because there are not 30 days between February 15 and March 15. There are only 28 days, or at most 29 in a Leap Year.

After the bond counsel has cleared the basic legal requirements, he must prepare the bond resolution, the local ordinance or trust indenture. The indenture is the contract between the borrower and the lender.

Basically, the attorney is then working for the benefit of the potential lenders. They want to know to what extent they will be protected, what taxes or fees will be levied, the amount that will be collected, terms of interest payment and bond retirement and, possibly, insurance coverage on the revenue-producing facility.

Bringing all this information together in the official statement, distribution of the official statement, creation of the market for the proposed issue, and determination of most attractive financing terms is the job of the municipal finance consultant.

This job may be handled by an independent firm, a firm of the prospective underwriting group, or an underwriting firm that will refrain from bidding on the issue for which it is advisor.

Obtaining this advice is relatively easy. There are the independent consultants and there are well over 2,000 municipal bond dealers throughout the country.

The financial consultant cannot be brought in too soon. He can be most effective if retained before the completion of the consulting engineer's feasibility report.

He then can work with the municipality's staff, and he can also help the consulting engineer arrive at a realistic rate structure for the project to be constructed.

The financial advisor can also prevent drawing what could prove to be a "too tight" indenture.

Preparation of that agreement between the community and the lenders is a delicate task, says E. Carlton Heeseler, manager of the municipal buying and statistical department of White Weld & Co., New York City investment bankers.

The investors want protection of their investment in the project, but not at the expense of shutting off future growth of the area. The earnings of the project must be protected, but the indentures should also allow room for a locality to provide additional facilities that might be needed by new industries, business and an expanding population, Mr. Heeseler warns.

The financial consultant also acts as the public relations man for the community and its proposed bond issue. He gets the official statement into the hands of known investors and makes certain the statement contains all of the details the lenders want to know.

And finally, the financial advisor determines the best time to offer the issue. In periods of generally tight money, the advisor cannot get a sub-market interest rate for the community, but he can help obtain the lowest rate possible in relation to the over-all condition of the money market.

He knows what type of bonds and the quantities scheduled for sale in future weeks. He can avoid competition from a similar offering of comparable quality, a situation that can bring a higher rate of interest or at least slow the sale of the issue.

No one of the consultants can single-handedly pull a saving out of the hat. Each is part of a team, operating on a fee basis, to pull together a marketable financial package.

The total fees of all three may run to several thousand dollars, but the savings they produce can run into the millions over the course of a 20- to 50-year period of local indebtedness.

New Capital for Construction

(in millions of dollars)

	Week of Sept. 17, 1959	Cumulative 38-week total 1959	1958	% Change 1958-59
State and Municipal.....	$ 80.2	$4,593.7	$4.808.2	— 4.4
All except housing.....	80.2	4,518.5	4,721.0	— 4.0
Housing	....	75.2	87.2	—14.0
Corporate Securities	56.7	2,688.7	4,107.0	—35.0
Total	136.9	7,282.4	8,915.2	—18.3

Delaware Roadbuilders Will Get Their Money

Delaware highway contractors are off the hook. They will be paid the $1.4 million due them for completed contracts.

The legislature last week approved borrowing of $15 million for new contracts and for payment of bills. Last month, the legislature adjourned without acting on the needed financing (ENR Aug. 27, p. 74).

Private Work Backlog Highest Since '56

The rate of new proposals for private construction projects is greater than any time since the 1956 boom.

Industrial building is the pace-setter. A-plants entering the planning stage in the first eight months of 1959 had a total estimated cost of more than $2.1 billion—163% greater than the same period last year. Proposed industrial building in 1959 exceeds in dollar volume all major categories except public buildings (see table).

Commercial building is the only type of private work down from last year. However, there's been such an excess of proposed commercial building over actual contracts let in the past few years that the current letdown is no threat to commercial contracts in future.

The big threat to commercial building awards—and to mass housing and local public works—is the rapid increase in borrowing costs. The current rise in interest rates threatens to delay private construction—keep it from moving through the planning stage into construction contracts as fast as in 1958 and early 1959.

Proposed heavy construction entering the backlog increased in August for the second straight month. Total estimated cost of these projects came close to $1.3 billion—17% above June's low for the year.

New proposed work exceeded the flow out of the backlog into construction contract by nearly $500 million. As a result, the total backlog of construction in the planning stage rose to $114.1 billion at the end of August.

Thus the ENR Backlog of Proposed Heavy Construction reversed a two-month decline. The total on August 31 returned to about the same volume as year. New proposed work exceeded the below the February 1959 record.

The temporary decline was mainly due to the $7.2 billion in work flowing out to contract.

Also adding to the outflow was $5 billion worth of project cancellations at some stage in planning.

The combined outflow slightly exceeded the $12.2 billion in new projects added to the backlog this year.

Backlog of private construction for the first eight months of 1959 is 4% above the same period of 1958, to $50.2 billion. In dollar volume, the largest categories in the first eight months are: mass housing, up 4% above the first eight months of 1958 to $22.7 billion; industrial buildings, up 3% to $17 billion; and unclassified—pipelines, transmission lines and private hydro power—up 6% to $10.4 billion.

How Construction Backlog Is Growing

in millions of dollars

	New Proposed Projects Added to Backlog of Heavy Construction in Planning					Projects Moving Out of Planning Stage (Backlog) Into Construction Contracts					Backlog as of Aug.		Total Contracts Awarded Jan.-Aug.	
	1959		1958	Jan.-Aug.	% Chg. from Jan.-Aug. '58	1959		1958	Jan.-Aug.	% Chg. from Jan.-Aug. '58		% Chg. from		% Chg. from
Type of Work	Aug.	July	Aug.	1959		Aug.	July	Aug.	1959		1959	Aug. '58	1959	1958
All Heavy Construction.	$1,257	$1,186	$878	$12,150	+22	$789	$1,153	$791	$7,225	+ 0.1	$114,106	+2	$14,325	+ 4
By Ownership														
Private	613	838	494	6,652	+45	369	407	252	2,560	+ 25	50,186	+4	6,973	+22
Public	644	349	385	5,498	+ 2	421	746	539	4,665	− 10	63,920	+1	7,352	− 8
State and Municipal	523	302	333	4,569	− 0.1	333	519	444	3,163	+ 16	50,573	+1	5,274	− 8
Federal	121	47	52	929	+15	88	228	95	1,502	+ 8	13,346	+2	2,078	− 8
By Type of Work														
PUBLIC														
Waterworks	43	17	12	288	−26	19	39	15	214	+ 51	2,690	+1	295	+34
Sewerage	85	46	60	437	+ 2	39	53	38	324	+ 9	3,638	+6	456	+ 9
Bridges	19	4	10	267	− 0.1	35	8	27	188	− 12	3,338	+1	540	+14
Highways	125	18	27	1,121	+ 1	97	151	183	995	− 19	12,604	−3	2,137	− 8
Earthwork, dams, waterways	10	9	5	136	−12	34	120	27	452	− 19	11,557	−1	654	−16
Buildings	308	204	220	2,572	+10	120	253	176	1,790	− 8	20,637	+4	2,293	−16
Unclassified*	54	50	50	678	− 3	76	122	73	703	− 12	9,454	+0.05	978	− 9
PRIVATE														
Mass housing	196	244	185	2,002	+33	92	117	72	732	+ 21	22,707	+4	3,150	+15
Commercial buildings	185	266	206	1,783	−12	91	142	43	736	+ 26			1,572	+16
Industrial buildings	203	260	60	2,117	+163	165	120	113	919	+ 42	16,990	+3	1,886	+46
Bridges	...	1	...	9	+1,410	...	1	0.5	1	+198	91	+9	8	−14
Unclassified**	29	67	43	740	+185	31	26	24	171	− 18	10,399	+6	358	+13

*Includes mainly airports, missile bases, tunnels **Includes mainly pipelines, transmission lines and private hydro-power ENR data

Labor Cautious on Jurisdiction

AFL-CIO seeks to minimize its jurisdictional problems and to face its enemies with a solid and united front

Internal rivalries in the AFL-CIO were soft-pedalled this week as officials of the big labor federation faced their outside troubles.

Using "United we stand, divided we fall" as the opening text for the federation's Third Constitutional Convention, which got under way in San Francisco last Friday, the AFL-CIO's top command remained almost mum on the craft-industrial union jurisdictional conflict that has become of prime concern to labor and management leaders in the construction industry.

No major solutions to the issue appeared on the horizon as the convention reached its half-way point. For the sake of expediency, the delegates had bought the plea of AFL-CIO President George Meany, who said: "We have got to close ranks. We have got to see that whatever differences exist are relegated to the background."

Earlier, Building Trades President Richard Gray, at his own department's convention, had issued a similar warning to AFL-CIO building tradesmen. "One thing," he said, "is certain—if we expect to get anywhere in Congress or anywhere else, the labor movement will have to stand up together, as we did in the old days, and fight shoulder to shoulder. This disunity and dissension within the family is only tearing us apart and weakening our whole position."

Behind these pleas lay the big issues—the steel strike, anti-union legislation at state and federal levels, the new labor reform law, organizing difficulties, and the mounting strength of "anti-union" forces.

Outside the main convention hall and on the floors of departmental conventions, however, the jurisdictional issues smoldered:

• Following several fervent pleas for a decisive stand on the usurpation of building trades' work jurisdiction by industrial unions, delegates to the Building and Construction Trades Department convention castigated the steelworkers union for its jurisdictional truculence, called for a speed-up in the application of the Miami Agreement for settling craft-industrial union disputes, and disapproved of the new Youngstown building trades-steelworker agreement (see p. 86). They called upon local councils to refrain from executing similar pacts in the future until an earlier plan initiated in Detroit "proves itself in actual practice."

• The metal trades accused the steelworker, oil, chemical and atomic worker unions of raiding their jurisdiction, while the industrial unions pressed their charge that the metal trades, which have been supported in their position by the building trades, have no legal authority to engage in council organization in competition with affiliated unions.

• The sheetmetal workers union bitterly complained about federation efforts to prevent any union from refusing to handle products made by another AFL-CIO union and called for building trades support to get the policy reversed. The matter is now in the hands of a special AFL-CIO committee.

Mr. Meany repeatedly tried to tone down the jurisdictional unrest whenever it arose. Urging the unionists to put the issue in its proper perspective, he said: "I have never yet seen a jurisdictional problem that would result . . . in the destruction of a union." He assured those in San Francisco that the Miami Agreement is working, but warned craft and industrial unions against the use of labor contract fabrication clauses, such as the plumbers have, and industrial union labor contract causes restricting construction by contract.

As the week began, it looked as if the AFL-CIO would be successful in keeping the lid on the jurisdictional feuds. But the extent of that success appeared to depend, in part, on how successfully mounting differences between Walter Reuther and Mr. Meany could be compromised.

Building Trades Face Many Issues

The AFL-CIO building trades unions, meeting in San Francisco for their 50th regular, departmental convention, took the following action on matters of interest to the construction industry generally:

• **Shorter workweek**—Endorsed a 35-hour workweek with no reduction in daily or weekly pay, and urged all affiliated unions and the department to seek that goal through collective bargaining and through pressure on Congress to put all federal employees on a 35-hour week.

• **Ten Commandments** — Recommended that the department's officers and Executive Council appoint a committee, after thorough investigation, to meet with the National Constructors Association to correct "some of the shortcomings" of the Ten Commandments and to bring the work practices code up to date.

• **Joint Board**—Recommended appointment of a committee to study, and then for the general presidents to act on, the desirability of rotating basic and sub-trade representation on the National Joint Board for the Settlement of Jurisdictional Disputes so all unions can obtain "more equal and just representation."

• **District 50**—Urged all local councils to take steps to organize the small home field, where the United Construction Workers are making inroads. They said the field "is a breeding ground for nonunion contractors" who later break away from the field and become major competition.

• **NLRB**—Accused the National Labor Relations Board of consistently and unfairly interpreting the law against trade unions, and called upon Congress to investigate.

• **Safety** — Commended President Richard Gray for his efforts to promote safety consciousness and urged continuation of fact-finding studies and discussion of accident prevention at all levels of the trade union movement.

• **Legislation**—Called the new labor law "hostile in design, destructive in purpose and oppressive in fact" and called for "a more effective program of accelerated and improved political action, education and organization."

• **Jurisdictional disputes**—Referred to the officers and Executive Council of the Building and Construction Trades Department for "study and action" proposals for the formation of local boards for the settlement of jurisdictional disputes on a local or statewide basis.

How State Laws Complicate Labo

What the State Laws Cover

State	Discrimination	Local Labor On Pub. Works	Strikes, Lockouts, Picketing	Secondary Boycotts, "Hot Cargo"	Union Shop
Alabama	No	No	Yes	Yes	R-T-W
Alaska	Yes	Yes	Yes	No	R-T-W
Arizona	Yes	Yes	Yes	No	R-T-W
Arkansas	No	Yes	Yes	No	R-T-W
California	Yes	No	Yes	Yes	No
Colorado	Yes	Yes	Yes	Yes	Yes
Connecticut	Yes	Yes	Yes	No	Yes
Delaware	No	Yes	No	No	No
D.C.	No	No	Yes	No	Yes
Florida	No	No	Yes	Yes	R-T-W
Georgia	No	No	Yes	Yes	R-T-W
Hawaii	No	Yes	Yes	Yes	Yes
Idaho	No	Yes	No	Yes	No
Illinois	Yes	No	Yes	No	No
Indiana	Yes	No	No	No	R-T-W
Iowa	Yes	No	Yes	Yes	R-T-W
Kansas	Yes	No	Yes	Yes	R-T-W
Kentucky	Yes	No	Yes	No	No
Louisiana	Yes	Yes	Yes	No	Yes
Maine	No	Yes	Yes	No	No
Maryland	No	Yes	No	No	No
Massachusetts	Yes	Yes	Yes	Yes	Yes
Michigan	Yes	No	Yes	No	Yes
Minnesota	Yes	No	Yes	Yes	Yes
Mississippi	No	Yes	No	No	R-T-W
Missouri	No	No	Yes	Yes	No
Montana	No	Yes	Yes	No	No
Nebraska	Yes	No	Yes	Yes	R-T-W
Nevada	No	Yes	Yes	No	R-T-W
New Hampshire	No	Yes	No	No	No
New Jersey	Yes	Yes	No	No	No
New Mexico	Yes	No	Yes	No	No
New York	Yes	No	Yes	No	Yes
North Carolina	No	No	No	No	R-T-W
North Dakota	No	Yes	Yes	Yes	R-T-W
Ohio	Yes	No	Yes	No	No
Oklahoma	No	No	No	No	No
Oregon	Yes	No	No	Yes	Yes
Pennsylvania	Yes	No	Yes	No	Yes
Puerto Rico	....	....	....	....	.....
Rhode Island	Yes	Yes	Yes	No	Yes
South Carolina	Yes	No	Yes	No	R-T-W
South Dakota	No	Yes	Yes	No	R-T-W
Tennessee	No	No	Yes	No	R-T-W
Texas	Yes	Yes	Yes	Yes	R-T-W
Utah	Yes	Yes	Yes	Yes	R-T-W
Vermont	No	Yes	Yes	No	No
Virginia	No	No	Yes	No	R-T-W
Washington	Yes	Yes	Yes	No	No
West Virginia	No	No	No	No	No
Wisconsin	Yes	No	Yes	No	Yes
Wyoming	No	No	No	No	No

(This is the last in a series of articles on state labor laws.)

Under the new federal labor law, the states will receive wider jurisdiction than at any time since 1935, when the National Labor Relations Act was passed.

The new law allows state courts and agencies to handle small cases declined by the National Labor Relations Board, applying either state laws or the federal laws, as they choose.

Judging from past experience, the states will not be reluctant to accept this bigger role in labor law enforcement. They have always been quick to pass their own laws in areas left vacant by federal labor law.

In fact, the maze of state labor laws and regulations—statutory, judicial and administrative—considerably complicates the field of labor-management relations. Some of these laws grew out of vacant areas purposely left by Congress.

An important example of this is the union shop provision of the federal Taft-Hartley Act. Taft-Hartley bars the closed shop but allows a union shop, which makes union membership by new employees a requirement after the expiration of a certain period of time—not less than 30 days. However, the Act also provides that the states may individually outlaw the union shop.

Thus far, 20 states, including Alaska, have outlawed the union shop by adopting "right-to-work" laws. These laws make it illegal to impose union membership as a condition of employment. Twelve other states have limits on closed and union shops (see table).

Three states—Colorado, Hawaii and Wisconsin—require a majority vote (ranging from two-thirds to three-quarters of workers in a bargaining unit) to establish a union shop. In five other states—Massachusetts, Minnesota, New York, Pennsylvania and Rhode Island—a closed shop has been upheld (in areas not reached by federal law) by judicial or administrative rulings.

The intermeshing of state and federal laws is also apparent in steps taken by states to regulate labor disputes. At present, 13 states have "little Taft-Hartley" acts similar to the one passed by Congress in 1947. In many other states, the subjects of strikes, boycotts, picketing, lockouts and "hot cargo" agreements are covered, not in comprehensive laws, but individually.

At least three states have laws dealing with lockouts, which have become in-

Relations

creasingly popular as a defensive tool for employers. In Kansas, the state labor commissioner must authorize a lockout. To legalize a lockout in Michigan and Mississippi, ten days notice must be given to the state. In Puerto Rico, a lockout is an unfair labor practice.

Strikes and picketing are covered even more widely in state labor laws. Four states—California, Florida, Iowa and Missouri—prohibit jurisdictional strikes. Eight states require majority approval before employees may strike or picket. And in six states, notice must be given to a specified state official or agency before a strike. Only Texas bans a strike for union recognition.

The police powers of the states are widely exercised in regulating labor disputes. At least 14 states prohibit violence among strikers or pickets.

Actually, this is the one area where the states may extend their authority into federal jurisdiction. Even in disputes that involve an unfair labor practice under the Taft-Hartley Act—normally outside the states' control—state agencies and courts may act when violence or breach of peace occurs, under the theory that they have a duty to preserve public safety and order. The federal government, on the other hand is primarily concerned with keeping interstate commerce unobstructed.

Two union weapons—the secondary boycott and the "hot cargo" contract—are banned by statutes in 14 states. And Florida prohibits picketing to maintain them.

The states have enacted substantial legislation in one area not covered at all by federal statute—discrimination in hiring. Twelve states outlaw hiring practices that discriminate on the basis of race, religion, color, ancestry or nationality. Eight other states prohibit such discrimination only on public works projects. Five states ban hiring that discriminates on the basis of age.

Strangely, most of the states also have laws that require employers to discriminate in hiring on public works. Six states require that public works contractors give preference in hiring to veterans. Twenty-three states require that such contractors give preference to residents of the state. Five of these states require that a certain portion—generally 80% to 95%—of the nonprofessionals on state projects be residents. North Dakota gives a 5% preference on bidding to highway and bridge contractors whose labor force is at least 90% state residents.

Labor in Brief . . .

• **Moves quickly**—The U. S. Labor Department has set up a Bureau of Labor-Management Reports to help it administer the new federal labor law. It is now preparing the necessary reporting forms and instructions for use by labor and management. Department representatives are available in 21 cities to explain the law's provisions to interested persons.

• **Means a higher tax**—Wisconsin has boosted the maximum amount of its weekly unemployment compensation benefits to 52½% of the statewide average weekly wage, adjusted semiannually, and has increased the duration period of benefits to 34 weeks.

• **Federation reports progress**—The AFL-CIO, on the eve of its third convention, reported in San Francisco last week that membership of its affiliates, based on per capita dues payment, stands at 12,671,000—an increase of 366,000 since the merger, but a drop of 80,000 from 1957.

• **Alaska contract approved**—Members of the Alaska Council of Carpenters have ratified a new three-year labor contract with the Alaska Chapter of Associated General Contractors, ending a three-month strike. Carpenters get a 30-cent wage increase this year, 25 cents next year and 23 cents in 1961.

• **A general trend**—Britain's Trade Union Congress, holding its annual conference last week, rejected "any form" of wage freeze, supported a policy of wage increases and went on record in favor of a shorter workweek.

• **Labor costs and discrimination**—A Canadian carpenters' official, claiming that Ontario-Hydro has been seeking carpenters under 40 years of age for its Otter Rapids hydro generator project, says wages will have "to shoot way up" or an "entirely new pension scheme" devised if construction workers are going to be retired at 40.

NCA Joins Joint Conference

The National Constructors Association, which pioneered development of the 10-point work practices code known as the "Ten Commandments," took another step in its efforts to curb unnecessary construction costs by affiliating last week with the Construction Industry Joint Conference.

CIJC was formed earlier this year by national unions and employer associations for the purpose of fostering industry unity, promoting contract system of construction and maintenance, and improving performance and productivity.

In announcing NCA's affiliation, association president W. R. Wood said NCA welcomes labor's San Francisco reendorsement of the Ten Commandments and urges all employer associations both national and local to support and enforce the code.

NCA, composed of large industrial contractors, was founded in 1946 to improve labor-management relations and to promote the general interests of members, customers and the public.

Labor Law Amendments Wanted

The United States Chamber of Commerce has already opened a campaign to amend the new federal labor law.

It warns that "the struggle for effective labor legislation has only begun," criticizes concessions to unions, such as those made for the construction industry, and calls, among other things, for:

• Passage of a federal right-to-work law banning the union shop.

• Putting labor under antitrust laws.

• Outlawing industry-wide bargaining that results in "monopolistic abuses."

• Making strike violence a federal crime.

• Banning political use of union dues.

• Outlawing featherbedding.

Meanwhile, the AFL-CIO building trades unions have promised to push for an amendment that would reverse the Denver Building Trades case (which prevents a union from shutting down an entire construction project by picketing during a dispute that exists with one of several contractors simultaneously engaged in work at the same site).

Youngstown Peace Pact Signed

Steelworkers and building trades unions agree on the type of industrial work each is entitled to perform

The steelworkers union, which has in the past refused to cooperate with the AFL-CIO in the federation's efforts to resolve jurisdictional conflicts between craft and industrial unions, has worked out a jurisdictional peace pact with the AFL-CIO building trades unions in Youngstown, Ohio.

From management's point of view, the agreement amounts to a labor memorandum outlining the types of work assignments that can be made by steel plant management without precipitating a labor dispute between the craft and steelworkers unions.

The Youngstown agreement adopts the "fundamental principle" that "all new construction work" should be done by the building trades and "all production and running maintenance work" by the industrial union. Where right to the work is in doubt, it says, past practice should prevail.

Conclusion of the agreement marks another step in labor's search for unity. It comes at a time when the AFL-CIO is trying hard to close its ranks to fight effectively against the anti-union forces it says are dominating the bargaining tables and legislative chambers.

The agreement is generally similar to one negotiated earlier with the auto workers in Detroit (ENR Jan. 29, p. 82). It states that the following types of work shall be done by the unions indicated.

By the building trades:

- All construction work on new buildings on a new plant site, including the first permanent installation of new machinery and equipment.
- All construction work on new buildings on an existing plant site or on a site adjacent to an existing plant site (unless historically done by plant employees, in which case past practice prevails).
- Complete remodeling of an existing building located on a separate and unrelated plant site, and where no production has been performed immediately prior to the remodeling.
- Complete remodeling of an existing building on an existing plant site, where no production has been performed immediately prior to the remodeling (unless historically part of such construction work has been done by plant employees, in which case past practice prevails).

By the steelworkers:

- All production work.
- All maintenance work, including the rebuilding and repair of furnaces (unless there is a past practice of performance by the building trades, in which case past practice prevails).

By either or both groups, depending on past practice:

- Dismantling, moving and installing old equipment and machinery in new buildings on a new plant site.
- Installation of machinery and equipment in new buildings on an existing plant site.
- Complete remodeling of buildings where production has been performed immediately prior to the remodeling.
- Rearrangement of equipment and machinery in plants under production.
- Work that falls in all doubtful areas.

A six-man joint committee, whose decisions are final and binding on both parties, is set up to administer the agreement. The committee, incidentally, is required to meet at least once a month even if there are no disputes on the agenda, for the purpose "of maintaining friendly and cooperative relationships" between the steelworkers and the building trades unions.

Both parties specifically subscribe to the aims and purposes of labor unity and agree to cooperate with each other in organizing the unorganized in their respective jurisdictions. Each also agrees not to try to organize or represent workers in the other's jurisdiction.

Subs Break Union's Pressure

A $450,000 antitrust suit against a carpenters' local union by two Minneapolis drywall subcontractors has been settled by an extraordinary 10-year contract between union and contractors.

In the agreement, Twin City District Carpenters and Joiners Council conceded that nailing drywall is a legitimate specialty of a union carpenter and promised that it would no longer discourage builders from hiring the two firms as drywall subs.

The two subs, Stark Drywall Co. and Modern Wall, Inc., had charged that the union:

- Pursued a declared policy to force drywall subcontractors out of business.
- Threatened to strike general contractors unless they quit doing business with drywall subs.
- Fined union carpenters who worked for drywall subs on trumped up charges.

Net result, according to the subs, was that union pressure on the generals was successful in cutting down the work of drywall subcontractors generally.

The subs' suit for triple damages charged conspiracy in restraint of trade in violation of the Sherman Act. It named the carpenters local as defendant and a number of general contractors as reluctant co-conspirators, though not defendants.

It was necessary to prove conspiracy because the Clayton Act exempts from the Sherman Act a labor union acting independently, according to the subs' attorney, Donald K. Smith.

The subs had satisfactory relations with the union until five years ago, when the union refused to sign a new labor agreement, according to Mr. Smith. He said the dispute arose because the union preferred general contractors to handle drywall work, so that their carpenters (rather than those hired by the subs) could perform the inside drywall work when bad weather prevented exterior work.

The question of whether Stark and Mordern Wall were union or nonunion contractors was not the basis of the dispute, although a union spokesman said that the two at times hired nonunion carpenters. Mr. Smith said, however, that the only time they did so was when the union refused to furnish men; at other times they hired union men on union terms.

The union also preferred its carpenters to become proficient journeymen, rather than drywall specialists, said Mr. Smith.

That goal could not be achieved in practice, the attorney said, because the work requires specialists.

The antitrust suit, out of which the settlement arose, was resorted to because the jurisdictional no-man's land prevented the subs from going to the National Labor Relations Board to make the union bargain for a new contract.

The state labor law was of no help because it imposes no obligation on unions to bargain, Mr. Smith said.

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $2.40 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.
SEND COPY TO: Official Proposal Division, Engineering News-Record Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

Bids: October 15, 1959.

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, Public Buildings Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A. M., advanced standard time, which is nine-thirty o'clock A. M., eastern standard time, on the 15th day of October 1959, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. NICKERSON, District Engineer, 353 Broadway, Albany 1, New York						
Albany and Saratoga (Int. Tour. Rte. 87)	FITS 59-14	Interstate Route 502 (Alb. to Clifton Park)FIC 57-12, FISH 57-17, FISH 58-3, FISH 57-16 and FISH 58-24 Project I-87-3(21)153	14.34	Traffic Signs & Delineators	$13,500 Plans $5	$244,000
Albany, Essex & Saratoga (Rtes. 29, 310, 28N & 32)	R.C. 59-141	Saratoga-Schuylerville, S.H. 244; Stillwater-Schuylerville, Pt. 2, S.H. 5230; Voorheesville-State Farm-Western Turnpike, Pt. 2, S.H. 1928 and Aiden Lair-Newcomb, Pt. 1, S.H. 5187	....	Clean. & Paint. 5 Bridges	$500 Plans $5	9,000
Essex (Rte. 9)	R.C. 59-144	Eube Mills-New Russia, S.H. 5117 New Russia-Elizabethtown, S.H. 5183	7.48	Asph. Conc. Pavt.	$18,000 Plans $5	329,000
Greene (Rte. 23A)	R.C. 59-137	Kaaterskill Clove, S.H. 5588	0.21	Asbestos Bonded Bin Type Retaining Wall	$19,000 Plans $5	344,000
Greene (Rtes. 23, 145 & 32)	FARC 59-128	Cairo-Windham, Pt. 1, S.H. 5233; Cooksburg-Cairo, Pt. 3, S.H. 8413; Cairo-Greenville, S.H. 8309; Cairo Hamlet, S.H. 954; South Cairo-Cairo, S.H. 887 and Saxton-Cairo, S.H. 9301. Project F-1159(1); F-567(4)	3.42 (0.40 Acc.)	9" Cem. Conc. Pavt., 2 @ 24' Var. Wide=2.46 Mi. Asph. Conc. Pavt.=1.36 Mi. Twin Bridge Comp. I-Beams, each 167.5', 2 Span	$83,000 Plans $5	1,505,000
Saratoga (Int. Tour. Rte. 87)	FISH 59-18	Interstate Route 502 (Clifton Park to Malta) Including Access Work on S.H. 5519 & Various Town and County Roads. Project I-IG-87-3(20)169	7.47 (4.58 Acc.)	9" Cem. Conc. Pavt. 2 @ 36' Var. Wide=7.40 Mi. Misc. Work=0.07 Mi. (Acc.=2.03 Mi. Cem. Conc. Pavt.; 1.89 Mi. Asph. Conc. Pavt.; 0.44 Mi. Bit. S.T. Pavt. & 0.22 Mi. Misc. Work). 6 Hy Seps. Comp. Beams; 6 Sp. 343.3', 3 Sp. 127.5', 3 Sp. 136.3', 3 Sp. 30.1', 3 Sp. 126.1', & 5 Sp. 259.3'; 3 R.R. Seps. Comp. Beams; 3 Sp. 148.5', 3 Sp. 148.5', & 3 Sp. 141'	$478,000 Plans $10	8,725,000
DISTRICT No. 3, E. E. TOWLSON, Acting District Engineer, 333 E. Washington Street, Syracuse, New York						
Onondaga (Int. Tour. Rte. 81)	FISH 59-23M	Interstate Route 505 (Nedrow to Tully) FISH 56-11 & FISH 56-12. Project I-81-2(28)67	11.47	Misc. Work (Roadside Development Drainage, Fencing & Maint. Area)	$29,000 Plans $5	530,000
Oswego (Int. Tour. Rte. 81)	FISH 59-22	Interstate Route 505 (Parish to Jefferson County Line, Pt. 2) and Pulaski-Williamstown, Pt. 1, S.H. 1288 (Access Reconst.). Project I-IG-81-2(26)119	10.35 (4.93 Acc.)	Asph. Conc. Type 1A Pavt. (Main Line)=10.35 Mi. (Acc.=3.52 Mi. Asph. Conc. Type 1A=1.27 Mi. Bit. Mac. Type 1 & 0.14 Mi. Misc. Work); 9 Hy. Seps. Comp. I-Beams 121.5', 120.3', 298.5', 253', 131.3', 129.7', 293.8', 215' & 219.6'; 1 RR Sep. I-Beam, 251.9'; 2 Brs. Comp. I-Beams210', & 210'; Br. R.C. Twin Box 41'	$368,000 Plans $10	7,056,000
DISTRICT No. 4, B. F. PERRY, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Genesee (Rtes. 5 & 33)	FAC 59-15 FARC 59-134	Batavia City: Main Street Arterial Highway (Summit St. To East City Line) Batavia-Stafford, Pt. 3, S.H. 5145A Project U-706(4), F-335(4)	1.53	Asph. Conc. Pavt.	$55,000 Plans $5	1,535,000
Livingston	FASS 59-21	Nunda-Dansville, Pt. 1 (County Road) Project S-501(2)	4.44	Bit. Mac. Rd. Mix (Asph. Emul.) Pavt.=4.38 Mi. Misc. Work=0.06 Mi.	$20,000 Plans $5	562,000
Ontario (Rte. 20C)	FARC 59-138	Bristol Valley, S.H. 188 Project S-551(1)	0.22	Asph. Conc. Type 1A Pavt.=0.19 Mi. Misc. Work=0.03 Mi.	$2,100 Plans $5	39,000
DISTRICT No. 5, E. G. H. YOUNGMANN, District Engineer, State Office Bldg., 65 Court Street, Buffalo 2, New York						
Chautauqua	FASS 59-23	Sinclairville: Railroad Street, County Road 49 Project S-553(1)	0.14	Bit. Surf. Treat. Pavt.=0.10 Mi. Misc. Work=0.04 Mi. Comp. I-Beam Bridge 78.3'	$7,500 Plans $5	140,000
Erie (Rte. 5)	FARC 59-89	Lake Shore-Lackawanna City, S.H. 5019 Project U-750(15)	0.68 (1.60 Acc.)	Asph. Conc. Type 2A Pavt.=0.90 Mi.; 9" Cem. Conc. Pavt. 2 @ 37' Var. Wide=1.38 Mi.; 2 Hy. Seps. Comp. I-Beams 160.5' & 160.5'; 2 Ped. Overpasses, Comp. I-Beams 124.5' & 129'; 1 Br. R.C. Twin Box 29.3'	$230,000 Plans $5	4,093,000
DISTRICT No. 6, JAMES H. THOMAS, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Allegany (Rtes. 17 & 21)	FARC 59-111	Andover Village, S.H. 5419; Andover-Alfred Station-Almond, S.H. 5512 Project F-589(7)	1.49	Asph. Conc. Pavt.=1.38 Mi.; Misc. Work=0.11 Mi. Prestressed Conc. Bridge 72' Sp. Twin R.C. Box Bridge 53.3 Sp.	$40,000 Plans $5	736,000
Chemung (Rtes. 13, 17 & 223)	FATS 59-15	Horseheads-Cayuta, Pt. 1, FASH 59-7; Horseheads-Cayuta, S.H. 5432A, Erin-Horseheads, S.H. 356, Elmira-Horseheads Connection, Pt. 2, FASH 54-15 & Horseheads Village, FASH 58-5. Project U-221(12); U-560(9)	....	Traffic Signs & Delineators	$1,100 Plans $5	21,000
Chemung (Rtes. 17 & 13)	FATC 59-5	Elmira-Horseheads Connection, Pt. 2, FASH 54-15 Horseheads-Cayuta, Pt. 1, FASH 59-7 Project U-221(11), U-560(8)	....	Furnish. & Install. Traffic Control Devices at 3 Intersections	$800 Plans $5	15,000
Steuben	FASS 59-22	Purdy Creek-Shovel Hollow County Road 28 Project S-541(1)	0.61	Asph. Conc. Pavt.	$7,000 Plans $5	120,000
Yates (Rte. 245)	FARC 59-132	Middlesex-Rushville, S.H. 1772 Project S-114(2)	4.00	Asph. Conc. Pavt. Minor Repairs of 3 Bridges	$42,000 Plans $5	757,000
DISTRICT No. 7, ROBERT W. SWEET, District Engineer, 444 Van Duzee Street, Watertown, New York						
Clinton (Rte. 3, 22 Int. Tour. Rte. 87)	FITS 59-16	Interstate Route 502 Section 7B-2 (Route 3, to Cumberland Head Road) Project I-87-4(12)310	3.54	Traffic Signs and Delineators	$4,000 Plans $5	67,000
Franklin (Rte. 95)	FARC 59-126	Moira-Bombay, S.H. 885 Hogansburg-Bombay, S.H. 820 Project S-499(2)	8.82	Asph. Conc. Type 1A Pavt.=8.80 Mi. Misc. Work=0.02 Mi.	$77,000 Plans $5	1,391,000
Franklin & St. Lawrence (Rte. 37)	FARC 59-100	Massena-Helena, Pt. 1, S.H. 1261; Raquette River-Hogansburg, Pt. 1, S.H. 1801 & Raquette River-Hogansburg, Pt. 2, St. Regis Indian Reservation-Fort Covington, Pt. 1, S.H. 8396. Project F-580(15)	5.07	Asph. Conc. Type 1A Pavt.=5.03 Mi.;Misc. Work=0.04 Mi.; 2 Hy. Seps. Comp. I-Beams 166.5' & 167.5'; 1 RR Sep. Comp. I-Beam Twin 2 Sp. 160' Each; 1 Br. Deck Girder Cant. Type Twin 5 Sp. 710' Each	$290,000 Plans $10	5,250,000
Jefferson (Int. Tour. Rte. 81)	FISH 59-19	Interstate Route 505, Section 7AB-1 (Jeff. Co. Line to S.H. 184). Project I-81-3(10)130	4.60 (5.81 Acc.)	Asph. Conc. Type 1A Pavt. (Main Line)=4.60 Mi. (Acc.=5.37 Mi. Asph. Conc. Type 1A Pavt. & 0.44 Mi. Gr. Grav. B.D.S.T. Pavt.) 2 Hy. Seps. Comp. W.F. Beams 6 Sp. 441', 4 Sp. 326' & 5 Sp. 297.5' 2 Brs. Reinf. Conc. Boxes 20' & 21'	$260,000 Plans $10	4,383,000
Jefferson (Int. Tour. Rte. 81)	FISH 59-21	Interstate Route 505 (Rift Bridge Approach) Project I-81-3(14)183	0.24	Asph. Conc. Type 1A Pavt. .	$11,000 Plans $5	194,000

(Continued on the following page)

OFFICIAL PROPOSALS

OFFICIAL PROPOSALS

(Continued from preceding page)

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 8, KURT G. RAUER, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Columbia	R.C. 59-139	Various Highways on Rtes. 9, 9H, 398, 22, 23, 66, 295 & 20	....	Tree Removal	$400 Plans $5	7,000
Putnam (Rtes. 216, 6 & 22)	R.C. 59-145	Kent-Towner, S.H. 798; Carmel-Mahopac, S.H. 1221; Croton Falls-Brewster, Pt. 2, S.H. 5438	1.32	Replacing Guide Railing	$900 Plans $5	16,000
Rockland	R.C. 59-140	Various Highways on Rtes. 9W, 340, 304, 45, 202, 59, 306 and 210	....	Tree Removal	$450 Plans $5	8,500
Ulster (Rtes. 28, 32, 209 Int. Tour. Rte. 587)	FITS 59-17	Interstate Route Connection 590 (Thruway Access at Rte. 28 to Albany Ave. & Broadway Kingston & S.H. 5173, S.T. 58-1, FISH 58-14 Project I-587-2(19), U-1009(4)	1.39	Traffic Signs and Delineators	$4,500 Plans $5	77,000
Westchester (Int. Tour. Rte. 487) (N.Y. 120 & 120A)	FITS 59-13	Interstate Route Connection 520 Cross Westchester Expressway (White Plains & Rye Sections) FICWE 56-1 & FICWE 57-1. Project I-487-2(17)22	7.47 (19.48 Acc.)	Traffic Signs and Delineators	$20,000 Plans $5	362,000
Westchester (Rte. 120)	R.C. 59-146	Crystal Springs-Chappaqua-Millwood, S.H. 1015	0.06	Relocation of R.C. Pipe Culvert	$1,000 Plans $5	18,000
DISTRICT No. 9, J. C. FREDRICK, District Engineer, 71 Frederick Street, Binghamton, New York						
Broome, Delaware & Otsego (Rtes. 17, 79, 26; 7B & 23)	R.C. 59-142	Windsor-Deposit, S.H. 5338; Chenango Forks-Whitney Point, S.H. 5206; Vestal-Vestal Center-Chenonut, S.H. 8331; Franklin-North Franklin, S.H. 8288 and Davenport Center-Oneonta, S.H. 5455	....	Clean. & Paint. 5 Bridges	$450 Plans $5	8,000
Delaware (Rte. 97)	R.C. 59-143	Hancock-Long Eddy, Pt. 1, S.H. 5671	0.08	Bridge Repairs (Sidewalk & Curb Removal & Replacement)	$400 Plans $5	7,000
Chenango (Rte. 23)	FARC 59-106 R.C. 59-107	Norwich-South New Berlin, Pt. 1, S.H. 596; Norwich-South New Berlin, Pt. 2, & South New Berlin-New Berlin; Pt. 1, S.H. 1394. Project F-620(10)	4.16	Asph. Conc. Pavt.=4.10 Mi. Misc. Work=0.06 Mi. Rehabilitation of Exist. I-Beam Bridge	$42,000 Plans $5	795,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage), Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as Amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bond shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders".

The right is reserved to reject any or all bids.

J. BURCH McMORRAN
SUPT. OF PUBLIC WORKS

Bids: October 14, 1959

West Hill Intercepting Sewer & Sewage Treatment Plant Additions

CITY OF ITHACA, NEW YORK

Separate bids for the construction of a Sanitary Intercepting Sewer on West Hill and for additions to the Sewage Treatment Plant, City of Ithaca, New York, will be received by the City Clerk in the City Council Chambers, City of Ithaca until 4:30 P. M., October 14, 1959, and then at said time and place publicly opened and read aloud. (This bid date was originally set at September 30, 1959, and has been changed to October 14, 1959.)

WEST HILL INTERCEPTING SEWER: The work to be performed under this Contract consists of the installation of 18", 21" and 24" diameter sewers on the east and west banks of Cayuga Inlet.

SEWAGE TREATMENT PLANT ADDITIONS: The proposed work is designated as: Contract #1, "Tank Construction"; Contract #2, "General Construction"; and Contract #3, "Electrical Construction".

Under Contract #1, "Tank Construction", the following units are to be furnished and erected: One (1) steel grit chamber, two (2) 85' diameter steel primary settling tanks, two (2) 122' diameter steel trickling filter tanks.

The work to be performed under Contract #2, "General Construction", consists of remodeling the existing primary sewage treatment plant, replacing the existing electrical and gas driven raw sewage lift pumps with new units; reconstructing the existing primary tanks into final settling tanks; construction of one (1) new final settling tank; construction of piping between the new steel tanks (contracted under Contract #1), and the existing facilities; construction of the recirculation pump control building complete with pumping equipment; installing rock media and distributor mechanisms in the two trickling filter tanks; installing sludge pumping equipment and piping in existing building; revising existing chlorinator storage room and installing certain equipment and other miscellaneous items in connection with the construction of a 4,000,000 gallon per day average flow secondary sewage treatment plant.

The work to be performed under Contract #3, "Electrical Construction", consists of construction of a new electrical aerial distribution system, all electrical work in connection with the new treatment units, and revision to the electrical equipment in the existing Control Building.

The Information for Bidders, Plans and Specifications map be examined at the office of the City Engineer, City Hall, Ithaca, New York, or at the office of Stearns & Wheler, Civil and Sanitary Engineers, 99 Albany Street, Cazenovia, New York. Copies of the Plans and Specifications may be obtained at said office of the City Engineer.

Plans and Specifications for the West Hill Intercepting Sewer may be obtained upon payment of $10.00 for each set. Copies of the Sewage Treatment Plant Plans and Specifications, which includes Contract #1, Contract #2 and Contract #3, complete in one set, may be obtained upon payment of $35.00 for each set. Any bidder returning plans and specifications in good condition within fifteen days after receipt of bids, will be refunded his payment and any non-bidder, upon so returning such set, will be refunded one-half of his payment.

The City of Ithaca reserves the right to reject any and all bids, and to waive informalities.

Financial assistance will be obtained for these projects from the United States Department of Health, Education and Welfare. The final awarding of each Contract is subject to the approval of the United States Department of Health, Education and Welfare; Public Health Service.

George A. Blean
City Clerk
Ithaca, New York

Bids: October 15, 1959.

Construction of the 345Kv Transmission Line Between Rochester Substation and Syracuse Substation From Monroe County to Onondaga County, New York

POWER AUTHORITY OF THE STATE OF NEW YORK
NIAGARA-ADIRONDACK TIE LINE
ADVERTISEMENT FOR PROPOSALS
SPECIFICATION NO. PA-9-3
CONTRACT NO. AL-3

NOTICE TO CONTRACTORS: The Power Authority of the State of New York will receive sealed proposals for the Construction of the 345KV Transmission Line Between the Rochester Substation and the Syracuse Substation, From Monroe County to Onondaga County, New York, until 10:30 A.M. Eastern Daylight Saving Time, on the 15th Day of October, 1959, at the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, at which time and place the proposals will be publicly opened and read aloud.

The principal items of work are estimated as follows:

Clearing Right of Way	300 Acres
Chemical Treatment of Right of Way	400 Acres
Erection of Steel Tower Structures and Grillages	3200 Tons
Stringing Bundled Conductors and Ground Wire	75 Miles

The major items of material will be furnished by the Authority.

The construction of the Transmission Line shall be completed on or before July 1, 1961.

Plans, Specifications and Proposal Forms for the work may be obtained from the Power Authority of the State of New York, at the Coliseum Tower, 18th Floor, 10 Columbus Circle, New York 19, New York, upon application and prepayment of a fee of Ten Dollars ($10.00) per initial set of contract documents, and Five Dollars ($5.00) per set for additional sets, no part of which shall be refunded. Plans, Specifications and Proposal Forms for the work will be on file in the Authority's Office and in the Offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and may be inspected by prospective bidders during office hours.

Bids must be made and returned in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 20 percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5238) will be received at Glendive, Montana, until 10 a.m., Mountain Standard Time, October 22, 1959, for furnishing labor and materials for Stringing Conductors and Overhead Ground Wires, Fort Peck-Dawson County-Bismarck, 230-Kilovolt Transmission Line, Fort Peck Project, Montana, and Transmission Division, North Dakota and Montana, Missouri River Basin Project. Location McCone, Dawson and Wibaux Counties, Montana; and Golden Valley, Billings, Stark, Morton and Burleigh Counties, North Dakota. Principal items are 307.59 miles of line—Furnishing and stringing three 954,000 circular-mil ACSR conductors; 310 miles of line—Furnishing and stringing two ½-inch galvanized steel overhead ground wires; and other work. Completion time 360 days. For particulars, address Bureau of Reclamation, P. O. Box 2553, Billings, Montana; P. O. Box 866, Glendive, Montana; or Building 53, Denver Federal Center, Denver 25, Colorado. Floyd E. Dominy, Commissioner.

OFFICIAL PROPOSALS

Bids: October 15, 1959

Construction of Sanitary Sewers

Sealed bids for Section "E-1" for the construction of Sanitary Sewers for the Gates-Chili-Ogden Sewer District, will be received by the Monroe County Sewer Agency, at its office at 406 Terminal Building, 65 Broad Street, Rochester 14, New York, until 11:00 A.M., E.D.T. on the 15th day of October, 1959.

Bidding forms can be obtained and plans and specifications examined at the office of the Monroe County Sewer Agency, or at the office of The Lozier Company, Engineers, 10 Gibbs Street, Rochester, New York.

Copies of plans and specifications may be obtained upon the payment of twenty dollars ($20.00).

The full amount charged will be returned to all bidders who return the complete plans and specifications in an acceptable condition within thirty (30) days from the date of award to the successful contractor. Half of the amount charged will be returned to non-bidders who return the complete plans and specifications in an acceptable condition within thirty (30) days from the date of award to the successful contractor. Checks or money orders should be made payable to the order of Clarence A. Smith, Monroe County Director of Finance.

The work consists of the construction of:

SECTION "E-1"—Approximately 9.5 miles of Sanitary Sewer, 8 inch to 20 inch diameter, with all appurtenances.

COUNTY OF MONROE
By: C. A. Bennett,
Purchasing Agent

Bids: Prequalification: October 15, 1959.
Bids: November 1959

Feeder Road Program
Ministry of Public Works
Republic of El Salvador

Bids: November 1959
Prequalification: October 15, 1959
Prequalification Questionnaire
NOTICE TO CONTRACTORS

The Ministry of Public Works of the Republic of El Salvador advises that during the month of November, 1959, the first bidding will take place for the construction of a major portion of the proposed Feeder Road Program of the Country. The Specifications, Plans and Contract Documents will be available for sale in El Salvador on September 21, 1959.

All Contractors interested in taking part in this bidding and in future biddings are requested to obtain copies of the Prequalification Questionnaire which is available in the Office of the Proveedor Especifico de Obras Publicas, Edificio Morazan, 3a C. P., San Salvador, El Salvador, C. A. These questionnaires must be completed and returned to the Proveedor not later than October 15, 1959.

MINISTRY OF PUBLIC WORKS
REPUBLIC OF EL SALVADOR
C. A.

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5241) will be received at Camp White, Oregon, until 10 a.m., Pacific Standard Time, October 27, 1959, for furnishing labor and materials for earthwork and structures for Ashland Lateral Rehabilitation, Talent Division, Oregon, Rogue River Basin Project. Location southeast of Ashland, Oregon. Principal items are 15,400 cu. yds. excavation; 390 cu. yds. concrete in structures; 2,820 lin. ft. concrete cylinder pipe (pretensioned) or concrete pressure pipe for siphons, 27 to 39-inch; and other work. Completion time 500 days. For particulars, address Bureau of Reclamation, P. O. Box 386, Camp White, Oregon; or Building 53, Denver Federal Center, Denver 25, Colorado. Floyd E. Dominy, Commissioner.

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THIS WEEK AND EVERY WEEK

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The advertising rate is $39.20 per in. for all adv. appearing on other than a contract basis. Frequency rates quoted on request.

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$2.40 per line, min. 3 lines. To figure advance payment count 5 aver. words as a line.
Position Wanted ads take ½ of above rate.
Box numbers—count as 1 line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.

ADDRESS BOX NO. REPLIES TO: Box. No. Classified Adv. Div. of this publication. Send to office nearest you.
NEW YORK 36: P. O. BOX 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

• *POSITIONS VACANT*

Asst. Prof.—To teach undergrad. courses in transportation, surveying, and fluid mechanics. Salary open. Civil Eng., University of No. Dak., Grand Forks.

Railroad Track Construction Engineer-Estimator must be capable of bidding and executing work for Private Track Contractor fully equipped with modern track laying equipment. State background, experience and salary required. Excellent opportunity for right man. Reply to: P.O. Box 274, Cincinnati 14, Ohio.

Job Superintendent—minimum 5 years experience as superintendent or carpenter foreman on concrete projects preferably in water and sewage tank field. Gunite experience helpful but not essential. Travel required. Submit resume with references, recent photograph, and salary requirements. Reply to P-2483, Engineering News-Record.

"Put Yourself in the Other Fellow's Place"

TO EMPLOYERS
TO EMPLOYEES

Letters written offering Employment or applying for same are written with the hope of satisfying a current need. An answer, regardless of whether it is favorable or not, is usually expected.

MR. EMPLOYER, won't you remove the mystery about the status of an employee's application by acknowledging all applicants and not just the promising candidates.

MR. EMPLOYEE you, too, can help by acknowledging applications and job offers. This would encourage more companies to answer position wanted ads in this section.

We make this suggestion in a spirit of helpful cooperation between employers and employees.

This section will be the more useful to all as a result of this consideration.

Classified Advertising Division

McGRAW-HILL PUBLISHING CO., INC.
330 West 42nd St., New York 36, N. Y.

• *POSITIONS VACANT*

Civil Engineers experienced in design of sanitary engineering projects or in related fields, including one experienced and qualified specification writer. Mid-West location. Please send complete resume. P-2556, Engineering News-Record.

Construction Superintendents—Graduate Engineers under 45. Experience in large earthmoving operations—highway, airport and dams—on production basis. Permanent position growing company in Southeast. Submit detailed resume experience, references, availability, salary desired, personal data to P.O. Box 2611, Montgomery, Alabama.

Engineer, versed in design and practical application of form work for reinforced concrete buildings, principally open centering for pan construction. Location southeast. Advise education, experience, references, availability and salary expected. P-2609, Engineering News-Record.

Erection Manager—Excellent opportunity— Middle-Atlantic structural steel fabricator. Send resume, references and salary requirements to P-2631, Engineering News-Record.

Highway Construction Superintendent, capable of handling road & bridge work, range of $3 to 6 million dollars, area New England & Eastern New York State. Send resume, qualifications, & salary requirements to P-2673, Engineering News-Record.

Mechanical Engineers—One fully experienced in all phases of pipe fabrication for Heating, Air Conditioning and Process Piping—One—Sales Promotion Engineer for Industrial installations. Permanent positions with large Kentucky Mechanical Contractor. Send complete resume of education, experience and salary requirements. P-2626, Engineering News-Record.

Civil Engineer for office design and field survey on roads and bridges in Central Illinois. Send resume and salary requirements to P-2635, Engineering News-Record.

Sanitary engineer for statewide public health program. Starting salary $7344 and travel expenses. Retirement plan in effect. Bachelor's degree and six years experience or Master's and five years experience both including two years in sanitary field. For information and application write Merit System Director, Kentucky State Health Department, 620 S. 3rd St., Louisville 2, Kentucky.

• *SELLING OPPORTUNITY OFFERED*

Steel Deck Salesman—Dallas—Fort Worth Area. Manufacturer wants district salesman now living in Dallas—Fort Worth with experience in steel deck and siding or structural sales. Minimum age 30. Give full background, qualifications and salary expected. SW-2668, Engineering News-Record.

• *EMPLOYMENT SERVICE*

Better Positions—$6,000 to $35,000. Want a substantial salary increase, more opportunity or different location? This national 48 year old service connects you with best openings. You pay us only nominal fee for negotiations: This we refund when employer pays placement fee. Present position protected. In complete confidence, write for particulars. R. W. Bixby, Inc., 559 Brisbane Bldg., Buffalo, N. Y.

• *POSITIONS WANTED*

Executive, female, Legal & Const. Background, Exp. Administrator, Mgr. Govt. Contracts Etc. PW-2521, Engineering News-Record.

Civil Engineer, BSCE, 36, married. Ten years structural design, contract management and administration. Gov't and private industry. Willing to travel some, wants to change. PW-2515, Engineering News-Record.

(Continued on page 91)

EMPLOYMENT NATIONAL COVERAGE OPPORTUNITIES

DISPLAYED RATE:

The advertising rate is $39.20 per inch for all advertising appearing on other than a contract basis. Frequency rates quoted on request.

An advertising inch is measured 7/8" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

UNDISPLAYED RATE:

$2.40 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Position Wanted ads take ½ of above rate.

Box numbers—count as 1 line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Not subject to agency Commission.

Send NEW Ads and Inquiries to Classified Advertising Division or ENGINEERING NEWS-RECORD, P. O. Box 12, N. Y. 36.

ENGINEERS

Mechanical - Chemical - Aeronautical

This research and engineering organization has openings for engineers in its expanding cryogenics activities. Work will involve research and development of ground-based fueling systems for missiles.

Positions are in:

Thermodynamics, Fluid Mechanics, Heat Transfer • Heat and mass transfer, transient and steady state conditions for compressible and incompressible flow, two-phase flow and other analytical design and development programs pertaining to gas-liquefaction cycles and cryogenic systems.

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Send resume to:

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POWERHOUSE SUPERINTENDENT

Superintendent of power plant located in Iran. Must be university graduate, with degrees in Electrical Engineering preferred, or have the equivalent in engineering experience. Should have at least two years experience as service operator in hydroelectric powerhouse. Working knowledge of plant equipment necessary. Complete responsibility for disassembly repairs and reassembly of major equipment. Salary commensurate with ability. Living allowance and other fringe benefits. Initial two year contract with possibility of renewal. Send complete detailed resume of experience and qualifications to Personnel Department.

HARZA ENGINEERING COMPANY
400 W. Madison St., Chicago 6, Illinois

GENERAL FOREMAN

Major Steel Company has need for top notch man with college background to supervise construction crews installing fabricated products in Midatlantic area. Projects include Tunneling, Jacking and Boring. Attractive starting salary with company car, expenses and bonus plan.

P-2488, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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Bridges, Industrial Structures, and other Civil Engineering Projects. Experienced in design and detailing. With capacity or potential to assume responsibility. Excellent opportunity with small reputable consulting firm in upstate New York.

KONSKI ENGINEERS
Jefferson Building Syracuse 2, N. Y.

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Capable of responsible charge of investigations, reports and design for growing consulting sanitary engineering firm. Minimum of ten years' experiences. Salary fully commensurate with qualifications. Excellent opportunity for advancement. Boston location. Complete resume in confidence.

P-2547, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

ENGINEERS

STRUCTURAL ARCHITECTURAL

Leading midwestern manufacturing firm with facilities in U. S., Canada and abroad has openings in its engineering and architectural departments. Work includes design and supervision of construction of large industrial, commercial and office buildings. Preferred age: 25-40. Please furnish resume of experience and education, salary requirements, and availability.

P-2542, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ENGINEER

Structural or mechanical graduate engineer with U.S. experience in design of gates for hydroelectric power plants, spillways and outlet works. Should be capable of making preliminary estimates and determining gate type selections. At least five years of experience desired. A younger man to work under supervision. Send complete detailed resume of experience and qualifications to Personnel Department.

HARZA ENGINEERING COMPANY
400 W. Madison St., Chicago 6, Illinois

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Transitman experienced in surveying and drafting. Full time year round employment for right man.

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SW-2644, Engineering News-Record
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• POSITIONS WANTED
(Continued from page 89)

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Construction Supt. General Construction. PW-8896, Engineering News-Record.

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The Road Money Solution

THE TEMPORARY SOLUTION to the problem of financing the Interstate highway program can be hailed on at least two counts: It permits the program to proceed at a reasonably good pace; and it contains the seeds from which a more adequate and lasting solution can evolve.

The solution calls for a one-cent-per-gallon federal gas tax increase for the next two years. For the following three years, the gas tax would be replaced by assigning part of the federal excise taxes on automobiles, parts and accessories to the Highway Trust Fund. That appears to constitute a decent compromise by both the Administration and Congress, considering their earlier inflexibility. Gratification that the compromise occurred, however, must be tempered with the realization that the $1.8 billion provided for fiscal 1961 and the $2 billion provided for fiscal 1962 are respectively 28% and 9% under what has been considered necessary to keep the program on schedule.

Also on the debit side is the atmosphere of uncertainty that prevailed while the compromise was hammered out. It resulted in damage to the highway program that will take some time to repair. Contract award totals dropped, and in many states it is too late to pick them up this year. Moreover, the drop was substantial. ENR figures show that the weekly contract awards for highways during August hit only $51.2 million—compared with $92.3 million for the same month last year. For the first 37 weeks of 1959, highway awards are 11% under those of last year's comparable period. When it is recalled that highway construction was expected to increase in 1959 the decrease is all the more regrettable.

Nevertheless, financing is now assured for several years ahead. Meanwhile, Congress can go ahead with its plan for extensive reconsideration in 1961 of the Interstate highway program. By that time, it will have two reports to help in exploration of possible revenue sources. One is the highway benefits study that will draw heavily on the AASHO test road. This could be used as the basis of a formula for future allocation of costs. The other report will be a revised estimate of cost to complete the Interstate System.

Congress will also have, as an accomplished fact, its decision to funnel excise taxes into the Highway Trust Fund. While this has been called a diversion from the Treasury's general fund, it would seem that if highway taxes are to pay for the Interstate System, these vehicle excise taxes more rightly belong in the Highway Trust Fund. Otherwise, it could be said that the highway users are taxed not only as a special group for a special purpose, but additionally as a special group for a general purpose.

But philosophy aside, there has been established an additional source of revenue for Congress to use in any permanent highway financing solution, and it may be hoped that the precedent set by the compromise will be continued.

The gas tax increase—if it follows the course of other "temporary" taxes—will more than likely remain in effect beyond the 22 months set for it. This, too, would be desirable if the pay-as-you-go concept is to be followed. The added revenue will help pay for the increase in the cost of completing the system, estimated at 37%.

The interim solution to the highway financing problem is a step in the right direction. It provides the money for the program to proceed, and it can set precedents that will assure completely adequate financing for its successful completion.

Pattern for the Future

A SIGNIFICANT CHANGE that could provide for optimum development of a natural resource occurred in Detroit with the city's purchase of the Wayne County water supply system (ENR Sept. 3, p. 26). The city now becomes the administering power of a county-wide water supply network with an ambitious $172-million plan for expanding into five more counties. Regionalization such as this is a sign of the times, and we will see more of it on an even bigger scale as time passes.

Regionalization of essential services—or at least strong pressure for it—seems inevitable for the growing population centers. With the urban crush pushing people out beyond the city as it has been since World War II the city line can become an artificial obstacle to orderly and economic development and to maintenance of the services demanded by people both inside and outside the line.

Even where population is not greatly concentrated, there is a strong motivation for regional thinking on problems such as water supply and sewage disposal. For these problems can involve a natural resource that crosses political boundaries—a fresh or salt water body, above or below ground. Problems involving such resources are regional and can seldom be treated otherwise without acrimonious conflict.

Regional control of water and sewage systems is a long established fact in some metropolitan areas, a point of strong dissension in others. Such disagreement is a natural thing, of course, for established systems always have strong adherents who are ready to resist vigorously the overturning of the old and substitution of the new. And it is also a good thing. The time must be right for change, and only the balance struck between differing concerned parties can set that time.

Once area-wide control is adopted, it need not matter whether the controlling agency is a regional one or the city itself, as in Detroit's case. The important thing is that a framework is established in which there is at least an opportunity for the most efficient development.

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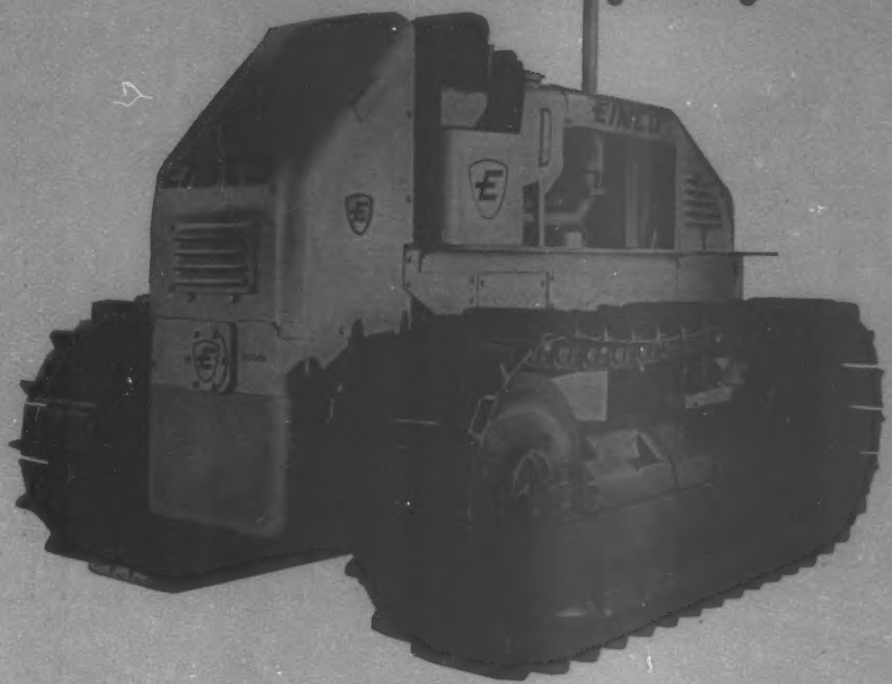

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